

Better Data Communication

Jonathan Schwabish

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The image features a large, circular seal of the Congressional Budget Office (CBO) on the right side. The seal is gold and blue, with the words "CONGRESSIONAL BUDGET OFFICE" and "U.S. CONGRESS" visible. The background is a dimly lit hallway with a red carpet and a black bag on the floor. The text "CONGRESSIONAL BUDGET OFFICE" is overlaid in white, serif font, centered horizontally and partially obscured by the seal.

CONGRESSIONAL BUDGET OFFICE

			Revenues, Outlays, and Balances as a Percentage of GDP				75 Year Present Value as a Percentage of		Trust Fund Exhaustion Year
			Year				GDP	Taxable Payroll	
	Option Name		2020	2040	2060	2080			
	Baseline ^a	Revenues ^b	4.9	4.9	4.9	5.0	5.2	14.4	20XX
		Outlays ^c	5.2	6.2	6.0	6.3	5.8	16.0	
		Balance ^d	-0.3	-1.3	-1.1	-1.3	-0.6	-1.6	
			Changes in Revenues, Outlays, and Balances as a Percentage of GDP				Change in 75 Year Present Value as a Percentage of		Change in Trust Fund Exhaustion Year
			Year				GDP	Taxable Payroll	
	Option Name		2020	2040	2060	2080			
1	Increase the Payroll Tax Rate by 1 Percentage Point in 2012	Revenues	0.4	0.4	0.3	0.3	0.3	1.0	XX
		Outlays	*	*	*	*	*	*	
		Balance	0.4	0.4	0.4	0.4	0.3	1.0	
2	Increase the Payroll Tax Rate by 2 Percentage Points over 20 Years	Revenues	0.3	0.7	0.7	0.7	0.5	1.6	YY
		Outlays	*	*	*	*	*	*	
		Balance	0.3	0.7	0.7	0.8	0.6	1.6	
3	Increase the Payroll Tax Rate by 3 Percentage Points over 60 Years	Revenues	0.2	0.5	0.8	1.0	0.5	1.5	ZZ
		Outlays	*	*	*	*	*	*	
		Balance	0.2	0.5	0.9	1.1	0.5	1.4	

Table 2.**Changes to Social Security's Finances Under Various Options with Scheduled Benefits**

(Percentage of GDP)

					75-Year Present Value as a Percentage of	
					GDP	Taxable Payroll
					Annual Finances	
					Current Law ^a	
					Revenues and Outlays ^b	
	2020	2040	2060	2080		
Revenues	4.9	4.9	4.9	5.0	5.2	14.4
Outlays	5.2	6.2	6.0	6.3	5.8	16.0
Balance	-0.3	-1.3	-1.1	-1.3	-0.6	-1.6
					Percentage-Point Change from Current Law ^a	
Change the Taxation of Earnings					Change in Annual Balance ^c	
1	Revenues	0.4	0.4	0.3	0.3	1.0
Increase the Payroll Tax Rate by 1 Percentage Point in 2012	Outlays ^d	*	*	*	*	*
	Balance	0.4	0.4	0.4	0.3	1.0
						
2	Revenues	0.3	0.7	0.7	0.5	1.6
Increase the Payroll Tax Rate by 2 Percentage Points Over 20 Years	Outlays ^d	*	*	*	*	*
	Balance	0.3	0.7	0.7	0.6	1.6
						
3	Revenues	0.2	0.5	0.8	0.5	1.5
Increase the Payroll Tax Rate by 3 Percentage Points Over 60 years	Outlays ^d	*	*	*	*	*
	Balance	0.2	0.5	0.9	0.5	1.4
						

<https://www.cbo.gov/publication/21547>

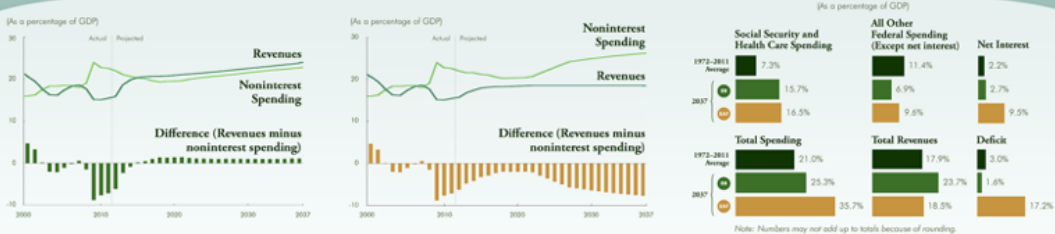
CBO's long-term projections reflect two broad scenarios:

EB CBO's Extended Baseline Scenario

Reflects the assumption that current laws generally remain unchanged, implying that lawmakers will allow tax increases and spending cuts scheduled under current law to occur and that they will forgo measures routinely taken in the past to avoid such changes. Noninterest spending continues to rise, however, pushed up by the aging of the population and the rising costs of health care, and revenues reach historically high levels.

EAF CBO's Extended Alternative Fiscal Scenario

Maintains what might be deemed current policies, as opposed to current laws, implying that lawmakers will extend most tax cuts and other forms of tax relief currently in place but set to expire and that they will prevent automatic spending reductions and certain spending restraints from occurring. Therefore, revenues remain near their historical average, and the gap between noninterest spending and revenues widens over the long term.

Federal Debt Held by the Public, Historically and Projected Under Two Policy Scenarios**Extended Baseline Scenario EB****Extended Alternative Fiscal Scenario EAF****Components of the Federal Budget**

Prepared by Natasen Constantino and Jonathan Schwabish
Contact: Long-Term Modeling Group

Sources: Congressional Budget Office, Office of Management and Budget
For details, see The 2012 Long-Term Budget Outlook, June 2012, <http://go.cbo.gov/107>

<https://www.cbo.gov/publication/43289>



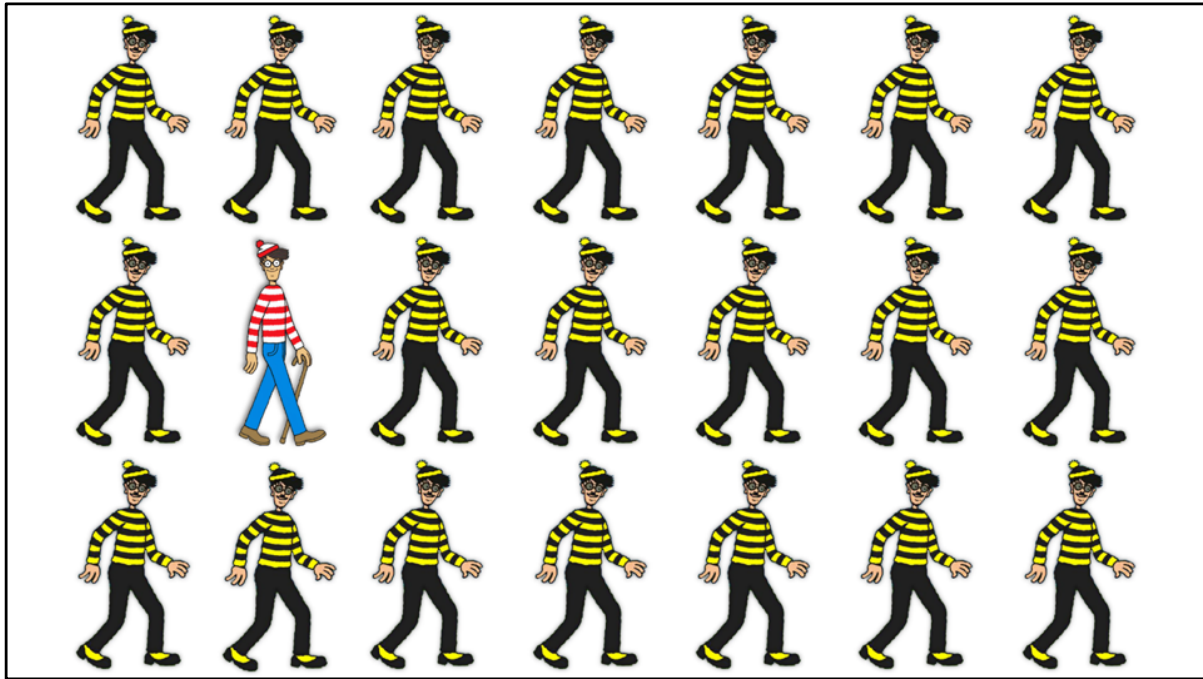


Better Data Communication

Preattentive Processing

Cognitive operations that can be performed prior to focusing attention on any particular region of an image.

...The stuff you notice right away.



<https://www.propublica.org/nerds/item/a-big-article-about-wee-things>



https://unsplash.com/search/food?photo=Tmz8FThN_BE



<https://unsplash.com/@trapnation?photo=JZn6wQiX4IE>

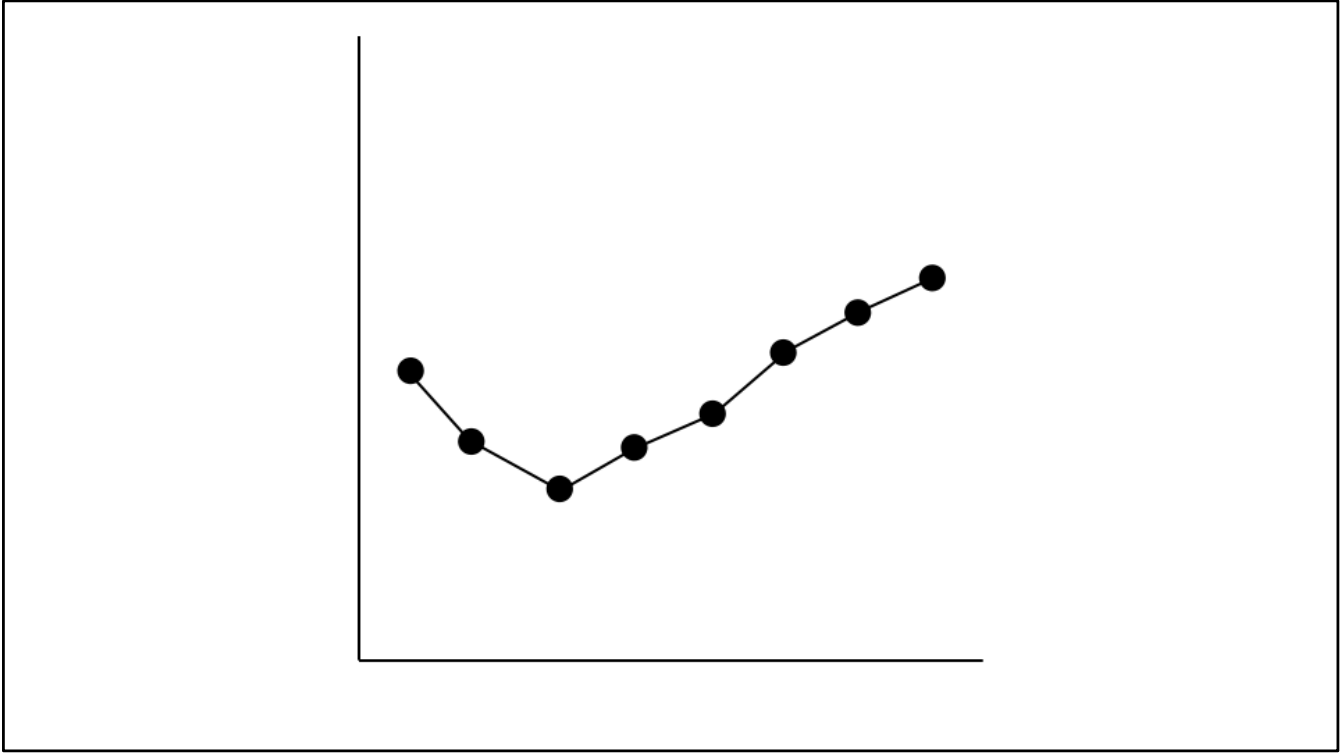


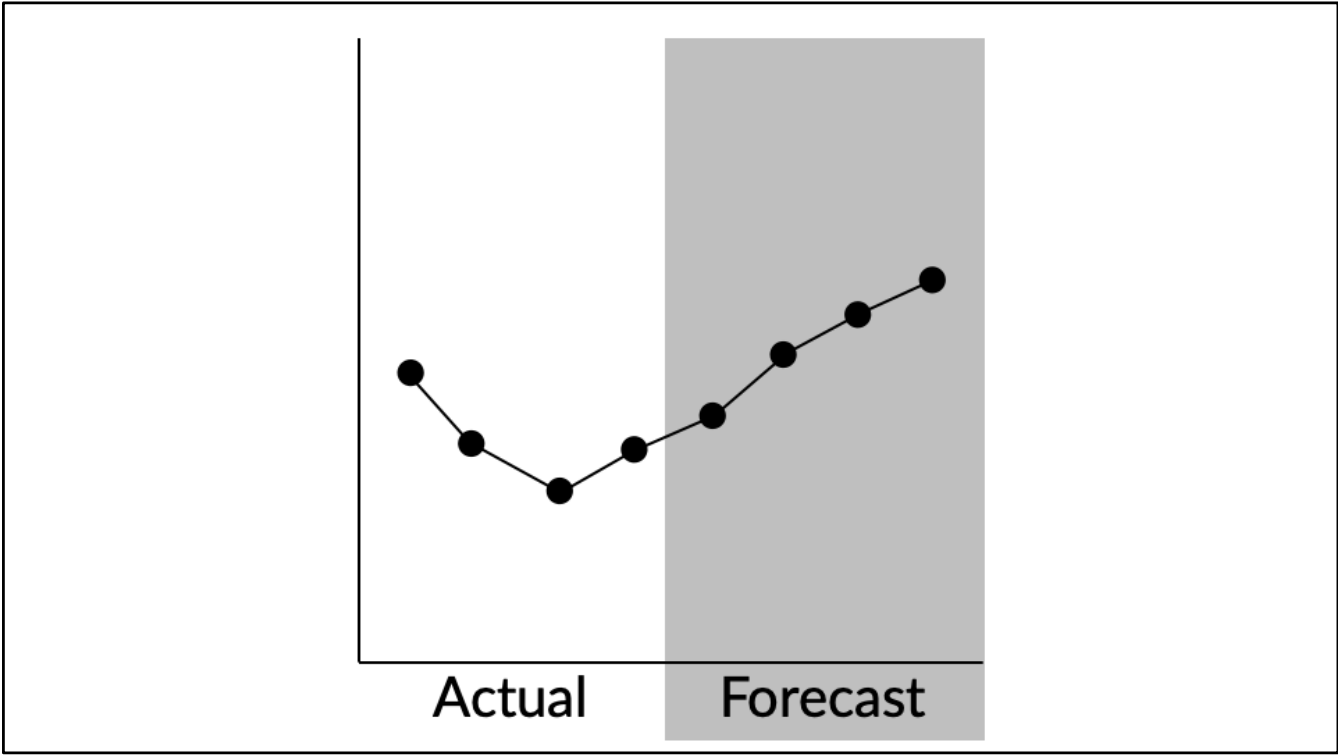
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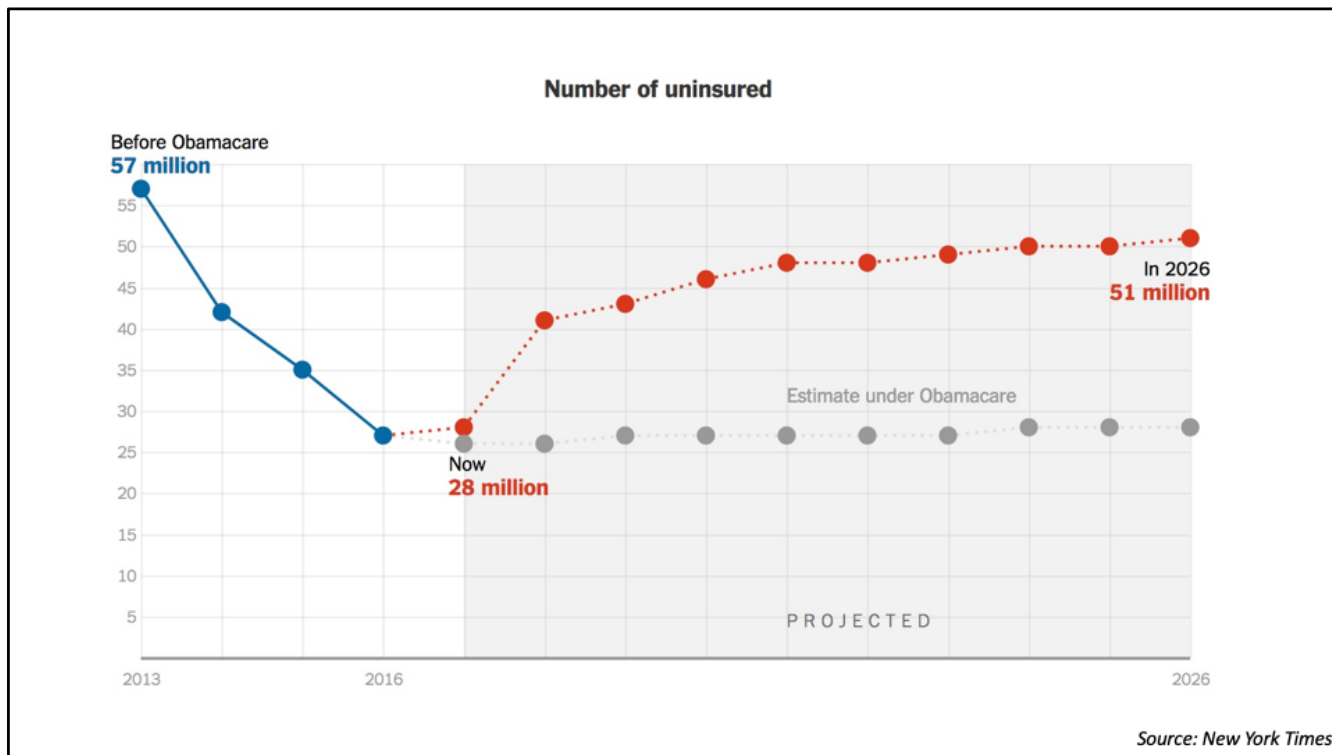
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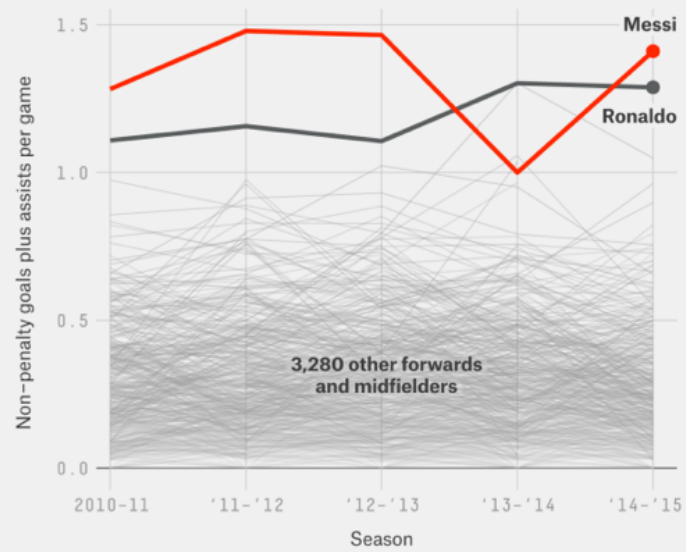




<https://www.nytimes.com/interactive/2017/05/24/us/cbo-score-ahca-amendments.html>

The Once And Present King

Offensive production of attackers in the "Big Five" soccer leagues



Values for 2014-15 do not include the UEFA Final
Only including attackers who've played at least 50 games total and 20 in a given season

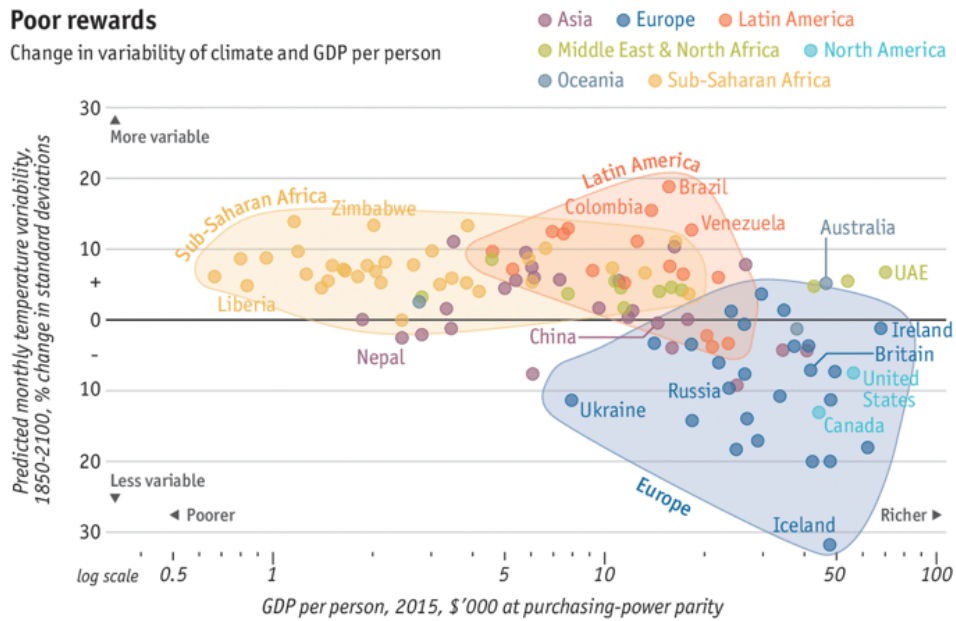
FIVETHIRTYEIGHT

BASED ON DATA FROM OPTA

<https://fivethirtyeight.com/features/our-47-weirdest-charts-from-2015/>

Poor rewards

Change in variability of climate and GDP per person



Source: "Climate models predict increasing temperature variability in poor countries", by Sebastian Bathiany, Vasilis Dakos, Marten Scheffer and Timothy M. Lenton, *Science Advances*, May 2018

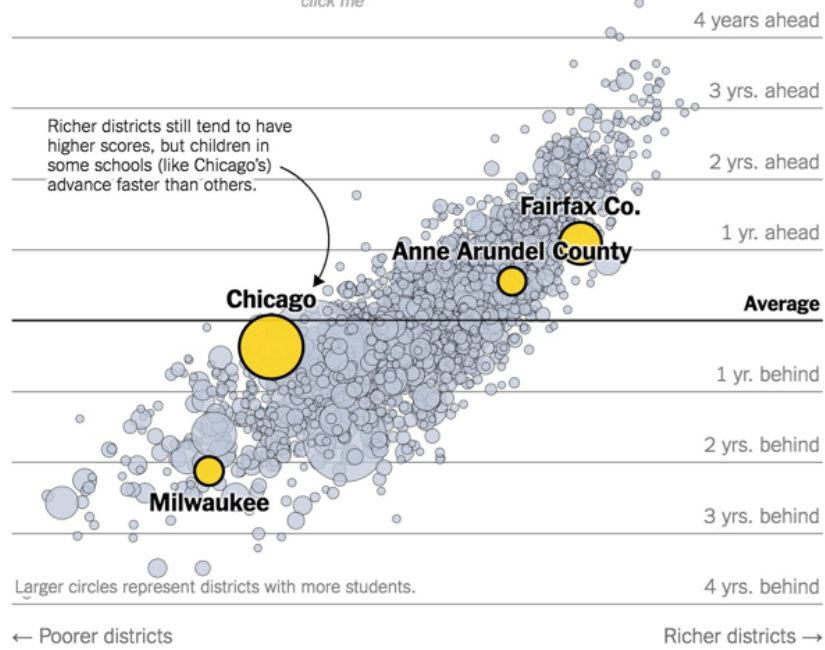
Economist.com

Source: *The Economist*

<https://www.economist.com/blogs/graphicdetail/2018/05/daily-chart-5>

Test scores for **8th graders** in 2,000 large school districts.

click me

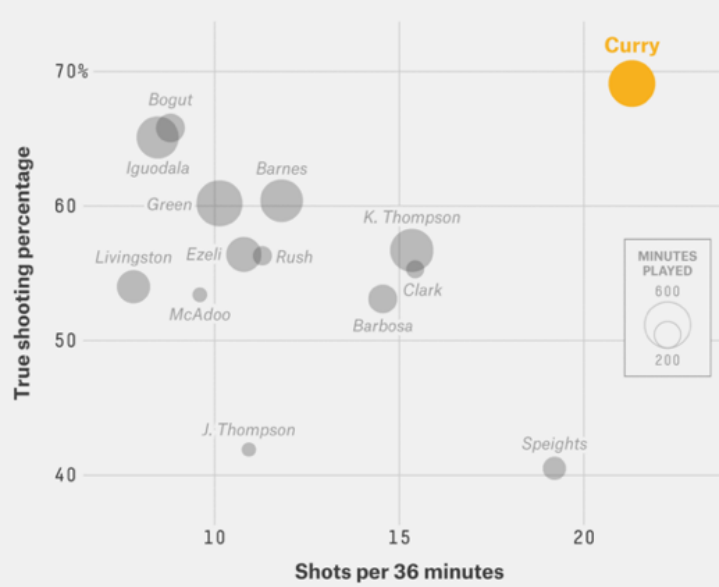


Source: New York Times

<https://www.nytimes.com/interactive/2017/12/05/upshot/a-better-way-to-compare-public-schools.html>

Only One Warrior Defies The Laws Of Efficiency

True shooting percentage vs. shots/36 minutes, 2015-16 Warriors



FIVETHIRTYEIGHT

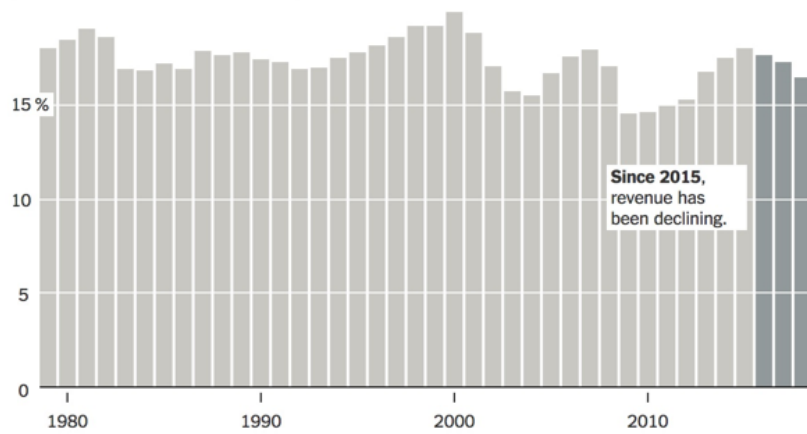
SOURCE: BASKETBALL-REFERENCE.COM

Source: FiveThirtyEight

<http://fivethirtyeight.com/features/stephen-curry-is-the-revolution/>

NEWS ANALYSIS

No, Trump's Tax Cut Isn't Paying for Itself (at Least Not Yet)



By The New York Times | Source: Congressional Budget Office and Treasury Department

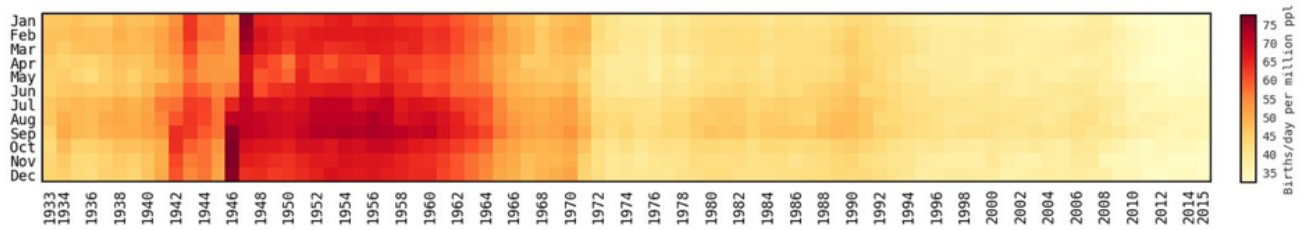
Source: New York Times

<https://www.nytimes.com/2018/10/17/business/trump-tax-cuts-revenue.html?action=click&module=Top%20Stories&pgtype=Homepage>

Monthly USA Birth Rate Per Capita 1933-2015

Rate = Births / Population / Days in Month

Birth data: Human Mortality Database
Population data: US Census Bureau
Code: [www.github.com/aaronpenne](https://github.com/aaronpenne)
Aaron Penne © 2018

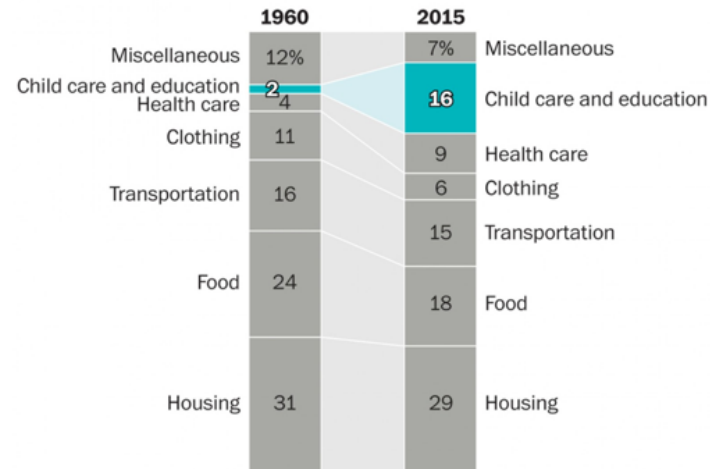


Source: David Montgomery

<https://twitter.com/dhmontgomery/status/981669901256544259/photo/1>

How the cost of raising a child has changed

In 1960, the average middle-income family spent the equivalent of \$202,020 in 2015 dollars to raise a child from infancy to age 17. Today, it costs \$233,610 to raise a child, and much of the increase comes from child care and education expenses as women joined the workforce.



Note: Spending levels are for married-parent households.

Source: USDA

DARLA CAMERON/THE WASHINGTON POST

Source: *Washington Post*

https://www.washingtonpost.com/news/business/wp/2017/01/10/its-more-expensive-than-ever-to-raise-a-child-in-the-u-s/?utm_term=.53fc6d16b5ca

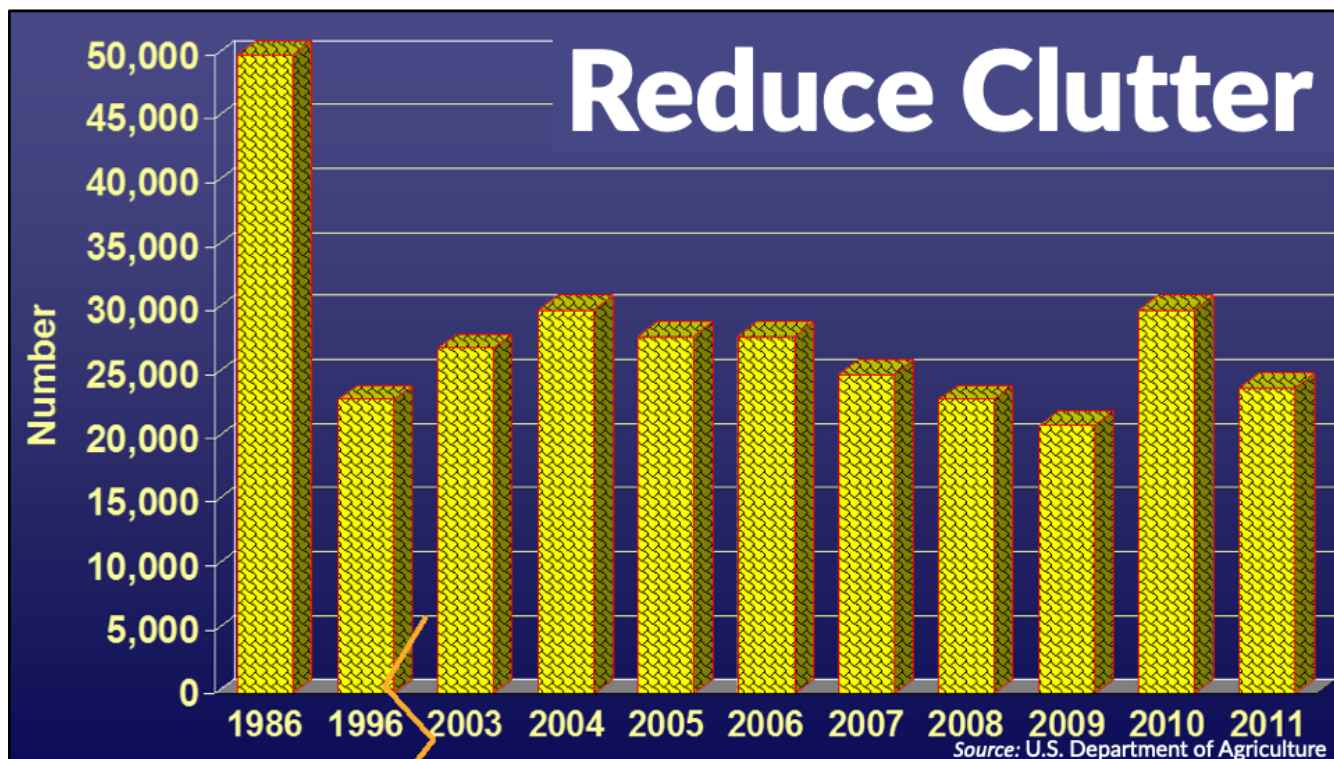
Strategies



Show the Data



Source: Brandon Martin-Anderson, bmander.com



Integrate Graphics & Text



Source: Washington Post



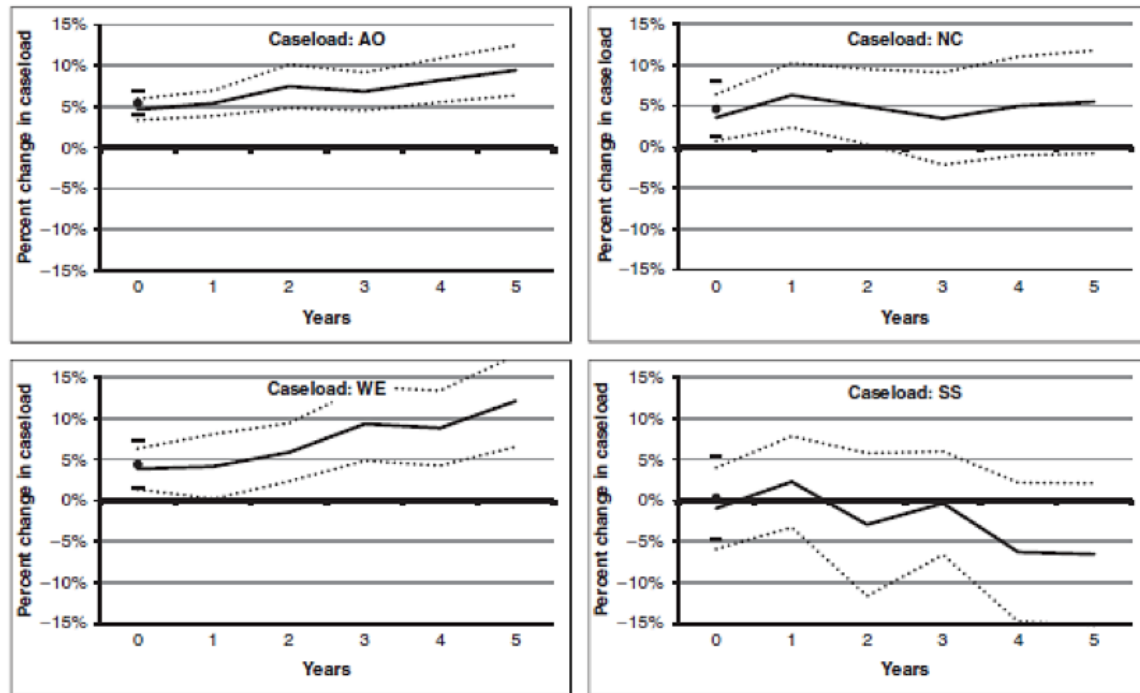
The more visual the input
becomes, the more likely it is
to be **recognized** and **recalled**

- John Medina, *Brain Rules*

John Medina, Brain Rules
<https://amzn.to/2C2Lh3F>

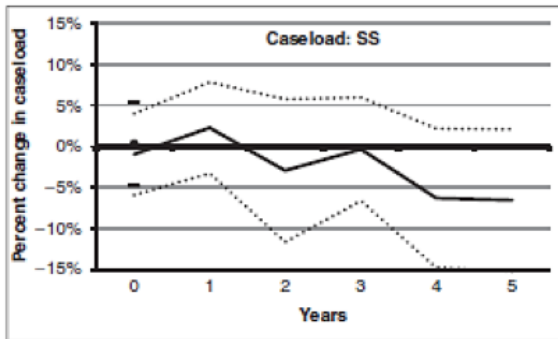
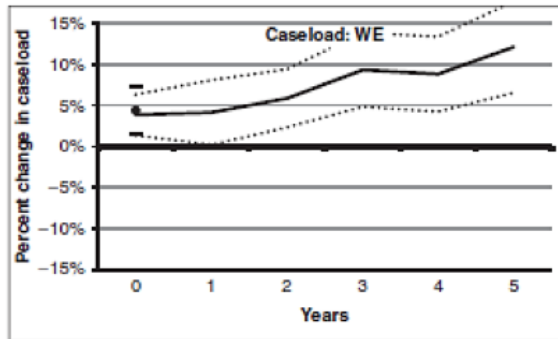
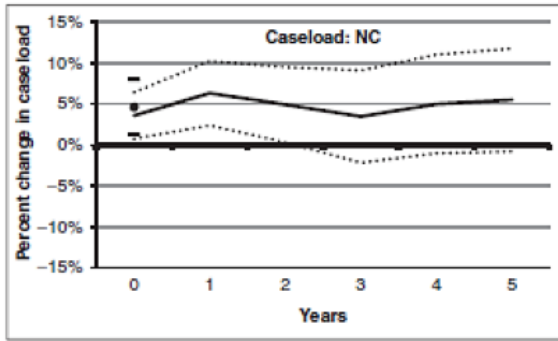
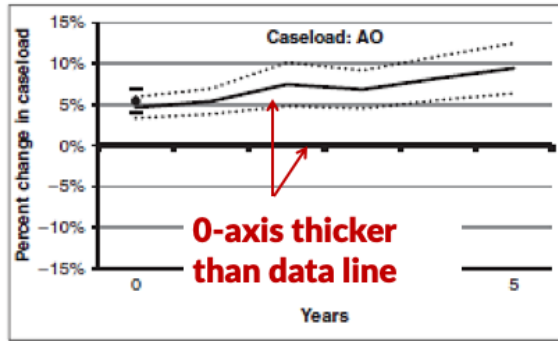
ineffective —————→ *effective*

cluttered —————→ *uncluttered*

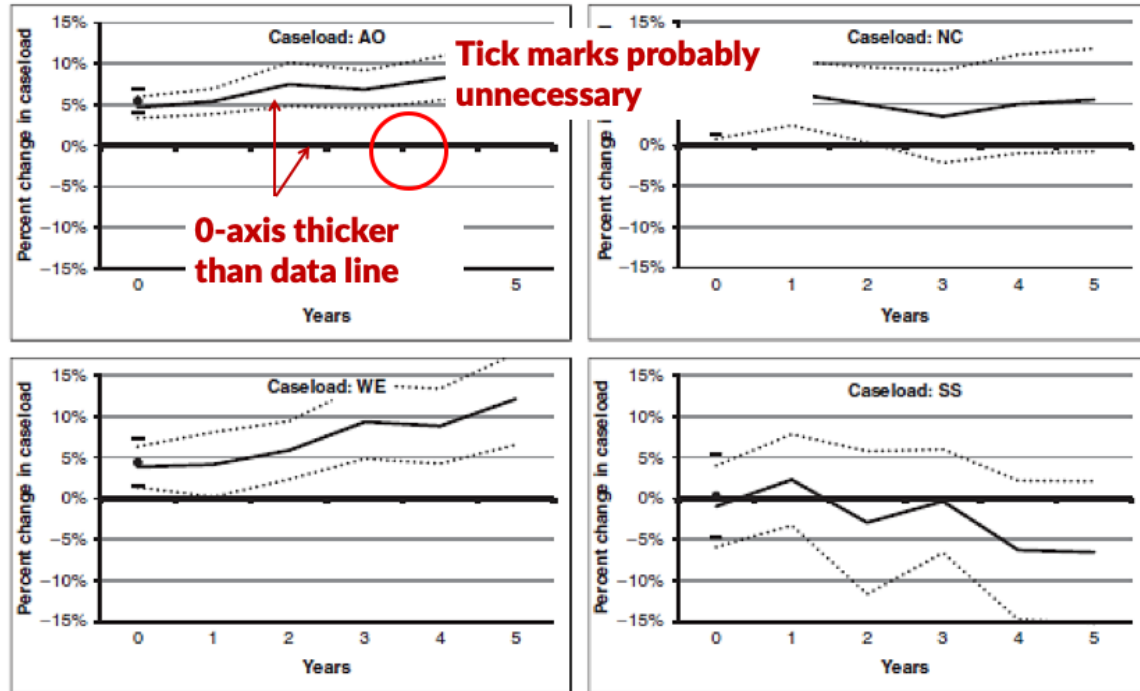


Source: Klerman and Danielson, *The Transformation of the Supplemental Nutrition Assistance Program*, 2011.

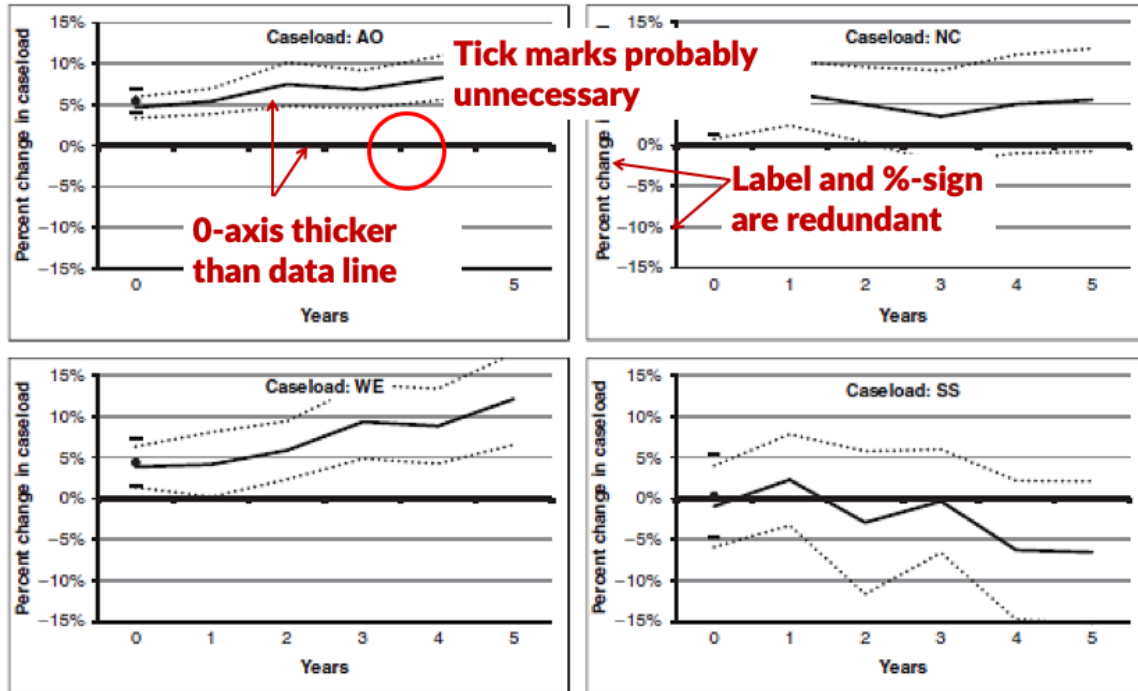
<https://onlinelibrary.wiley.com/doi/abs/10.1002/pam.20601>



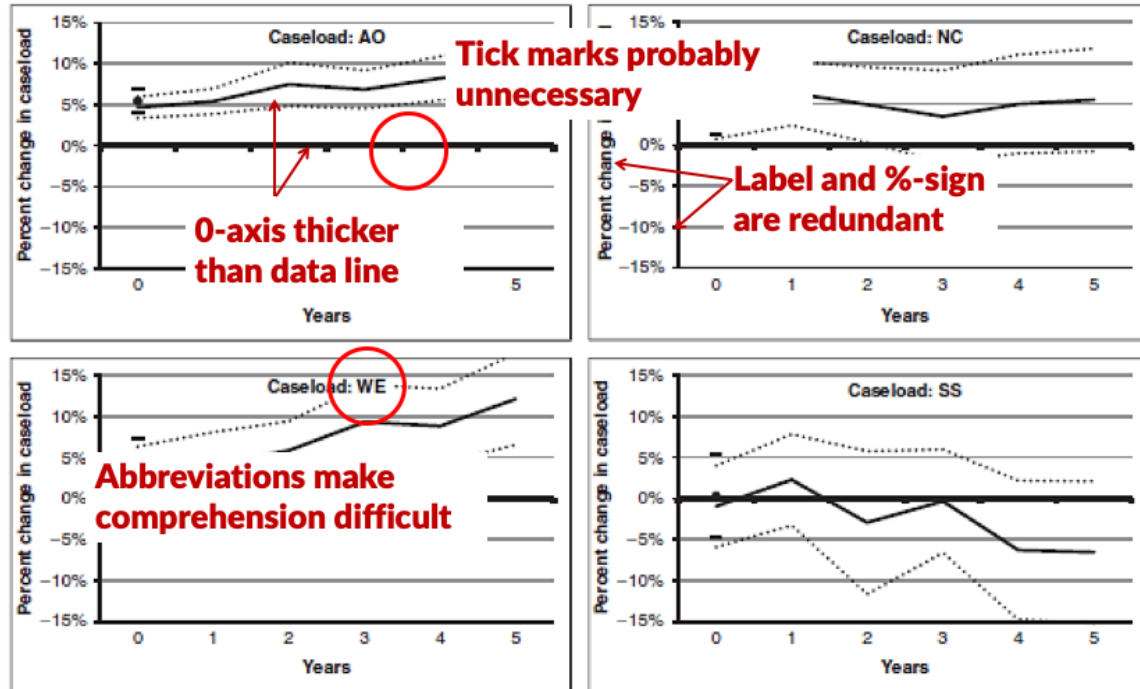
Source: Klerman and Danielson, *The Transformation of the Supplemental Nutrition Assistance Program*, 2011.



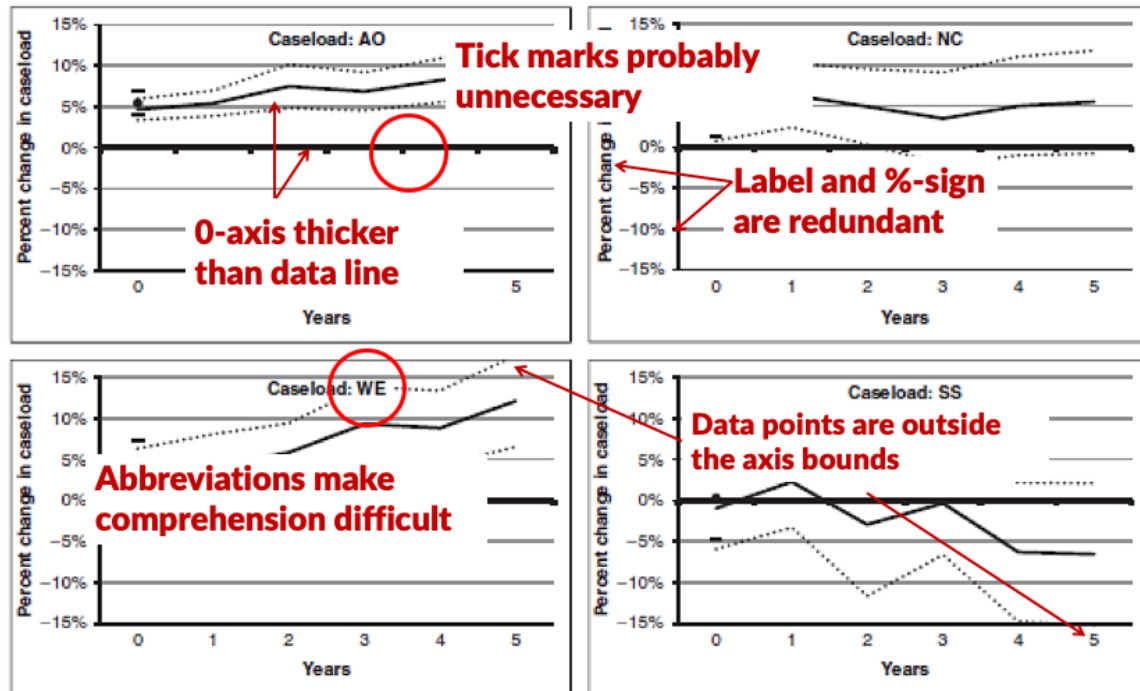
Source: Klerman and Danielson, *The Transformation of the Supplemental Nutrition Assistance Program*, 2011.



Source: Klerman and Danielson, *The Transformation of the Supplemental Nutrition Assistance Program*, 2011.

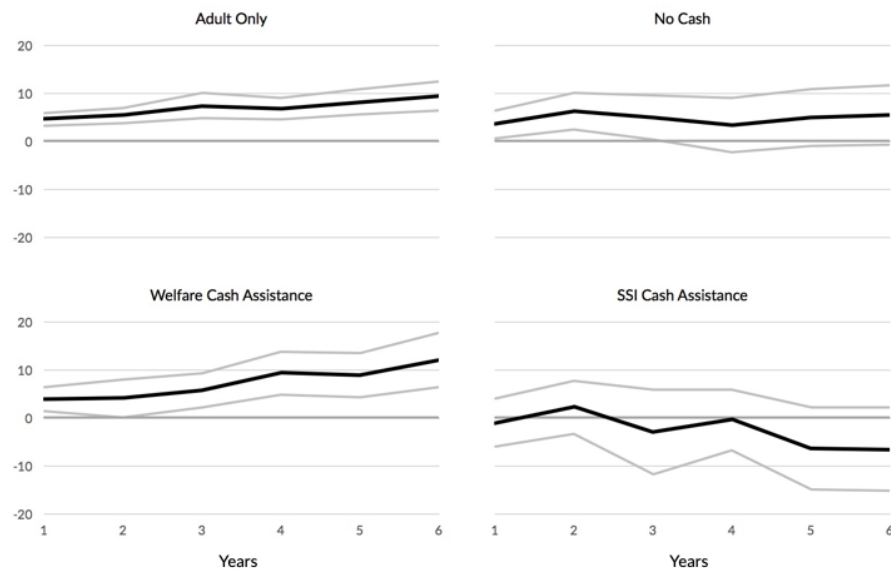


Source: Klerman and Danielson, *The Transformation of the Supplemental Nutrition Assistance Program*, 2011.

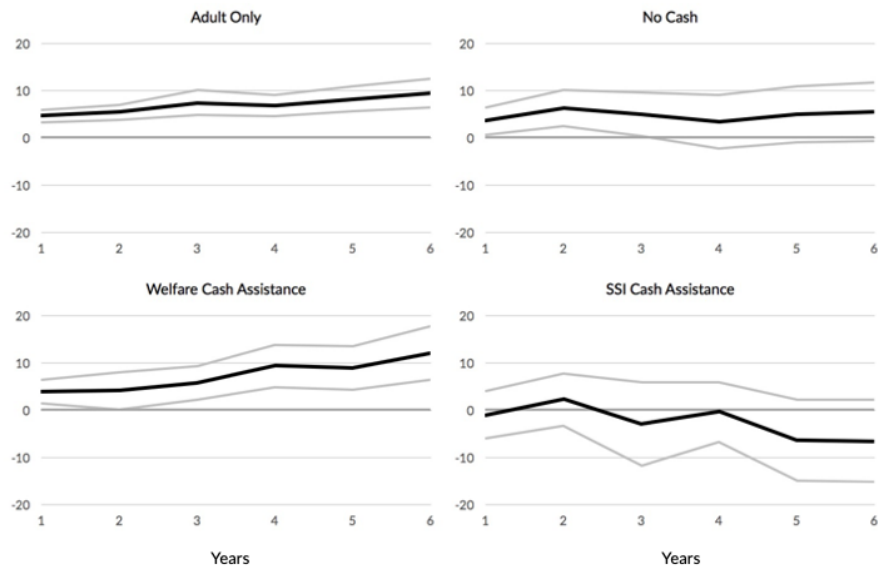


Source: Klerman and Danielson, *The Transformation of the Supplemental Nutrition Assistance Program*, 2011.

Implied Impulse Response Functions for Different Caseloads (Percentage Change)



Implied Impulse Response Functions for Different Caseloads (Percentage Change)



Implied Impulse Response Functions for Different Caseloads (Percentage Change)

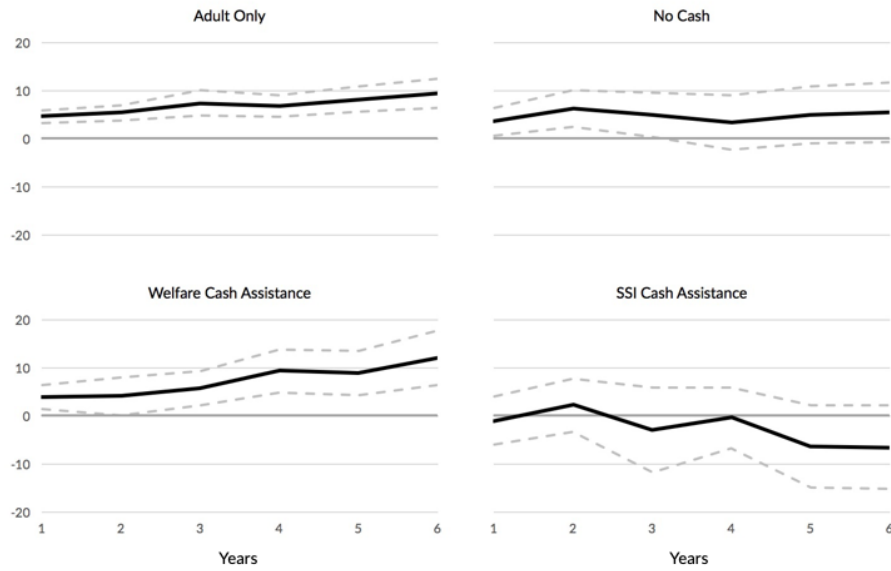
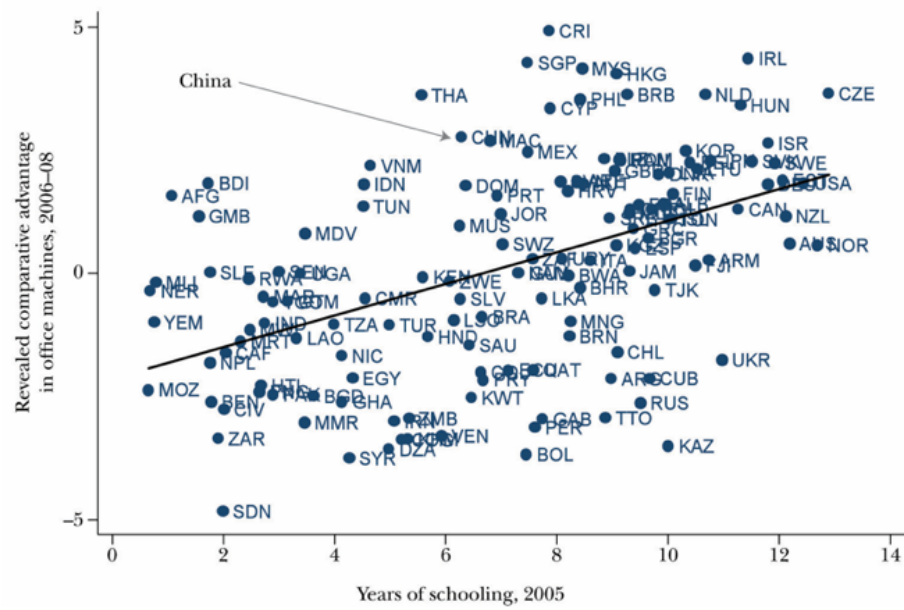


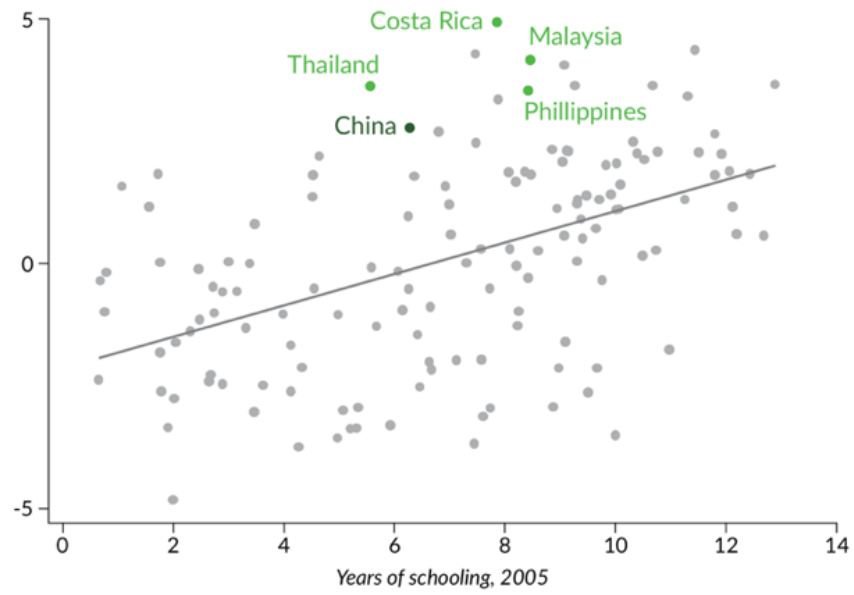
Figure 4
Education and Exports of Office Machines



Source: Gordon Hanson, *Journal of Economic Perspectives*, Spring 2012

https://gps.ucsd.edu/_files/faculty/hanson/hanson_publication_it_kingdoms.pdf

Figure 4
Education and Exports of Office Machines
(Revealed comparative advantage in office machines, 2006-08)



separated —————→ *integrated*

Remove Legends



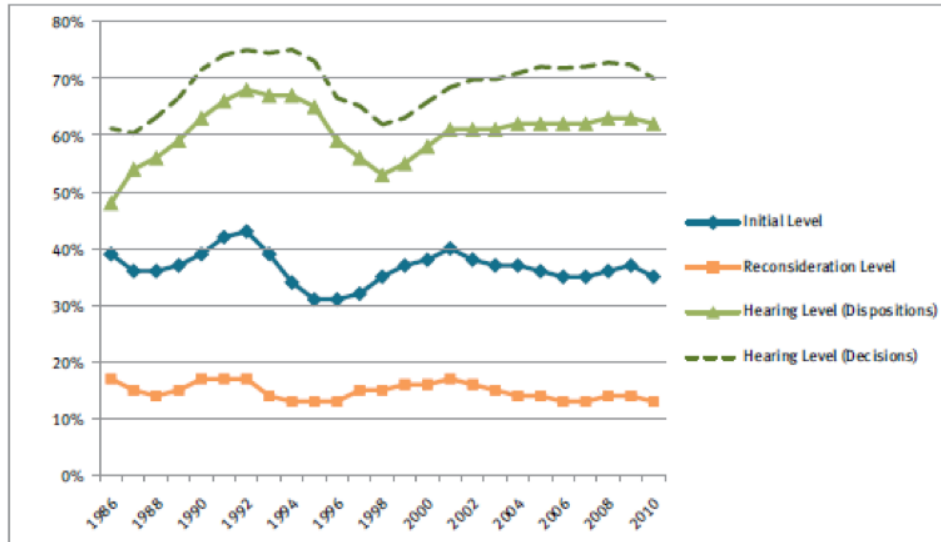
Make Titles Active



Add Annotation

Remove Legends

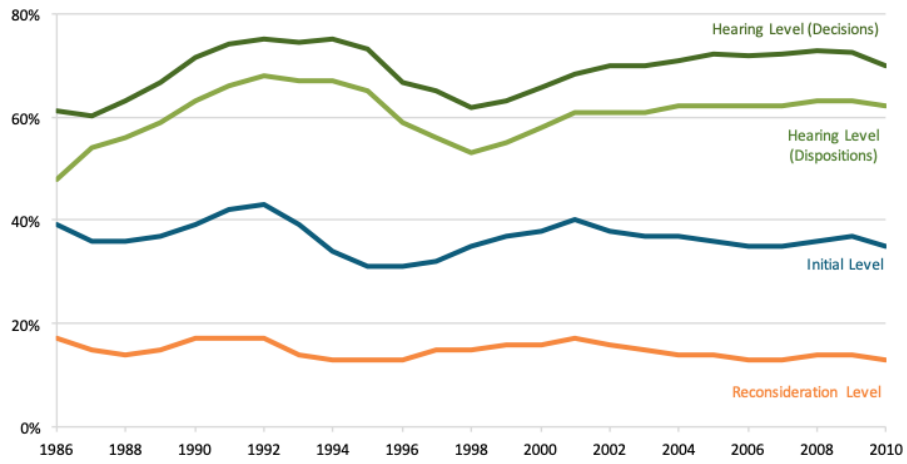
7. Combined DI and SSI Allowance Rates at Each Level of Adjudication—Fiscal Years 1986-2010



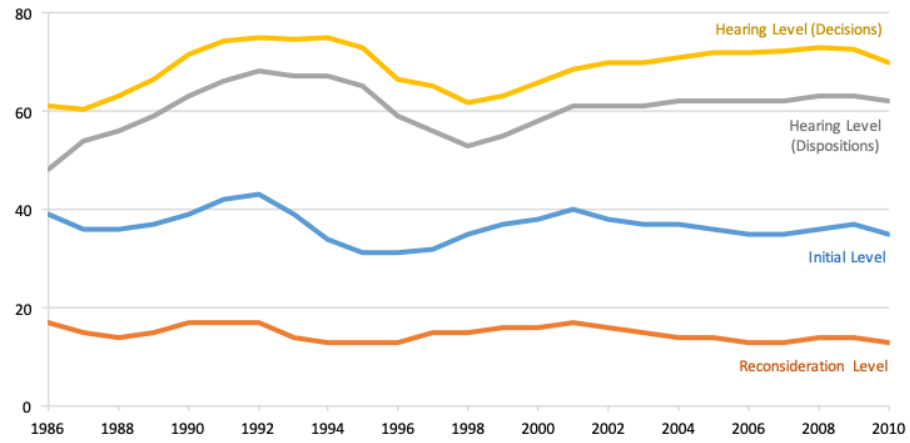
Source: Social Security Advisory Board, *Aspects of Disability Decision Making: Data and Materials*, February 2012

<http://www.ssab.gov/Details-Page/ArticleID/217/CHARTBOOK-Aspects-of-Disability-Decision-Making-Data-and-Materials-February-2012>

**7. Combined DI and SSI Allowance Rates at Each Level of Adjudication
(Fiscal Years 1986-2010)**



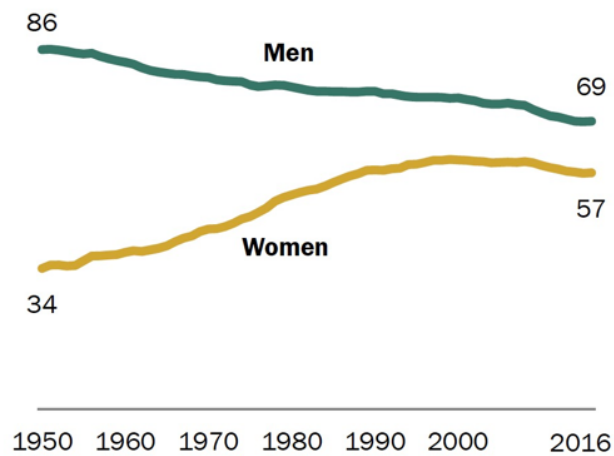
**7. Combined DI and SSI Allowance Rates at Each Level of Adjudication
(Fiscal Years 1986-2010)**
(Percent)



Make Titles Active

Labor force participation rate has risen for women, fallen for men

Labor force participation rate (%), among those ages 16 and older

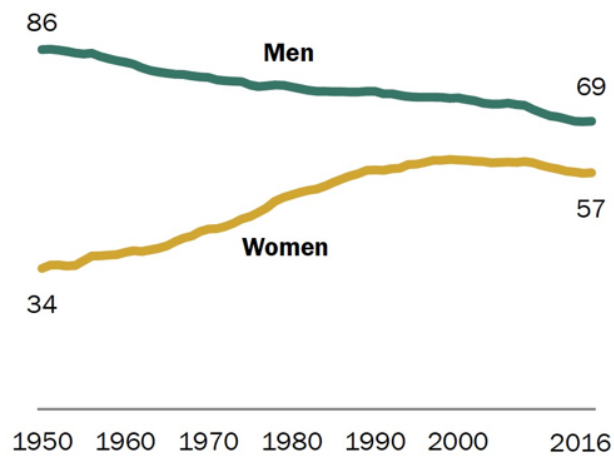


Source: Pew Research Center

<http://www.pewsocialtrends.org/2017/10/18/wide-partisan-gaps-in-u-s-over-how-far-the-country-has-come-on-gender-equality/>

Labor force participation, Men and Women, 1950-2016

Labor force participation rate (%), among those ages 16 and older



Source: Pew Research Center

<http://www.pewsocialtrends.org/2017/10/18/wide-partisan-gaps-in-u-s-over-how-far-the-country-has-come-on-gender-equality/>

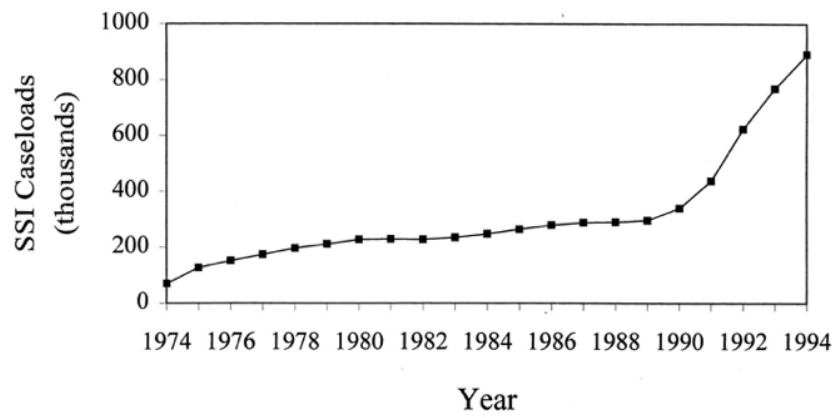


Fig. 1. Number of children receiving SSI benefits: 1974–1994.

Source: Kubik, *Journal of Public Economics*, 1999

<https://www.sciencedirect.com/science/article/abs/pii/S0047272799000092>

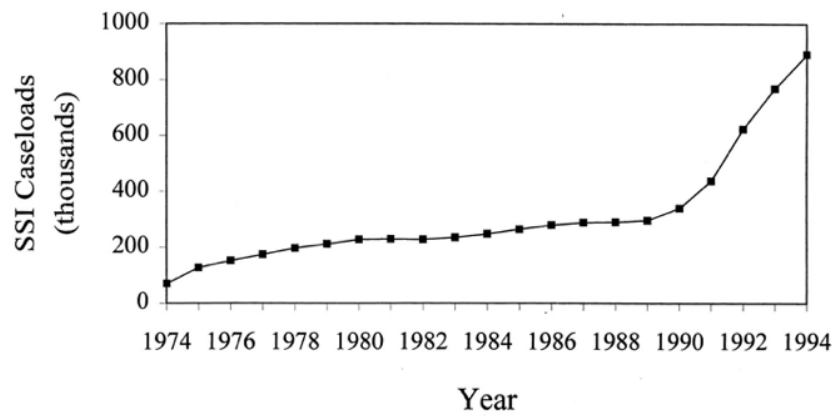


Fig. 1. Number of children receiving SSI benefits: 1974–1994.

1 plots child SSI caseloads from the program's inception in 1974 until 1994. For the first 15 years, the program grew slowly but steadily until about 300 000 children received assistance. After 1990, the number of applicants more than quadrupled and the acceptance rate climbed from one-third to over one half, allowing over 600 000 more children onto the SSI rolls. This liberalization

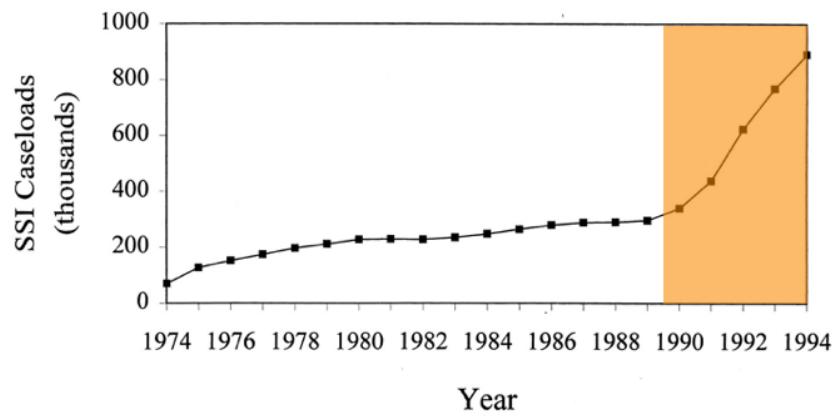


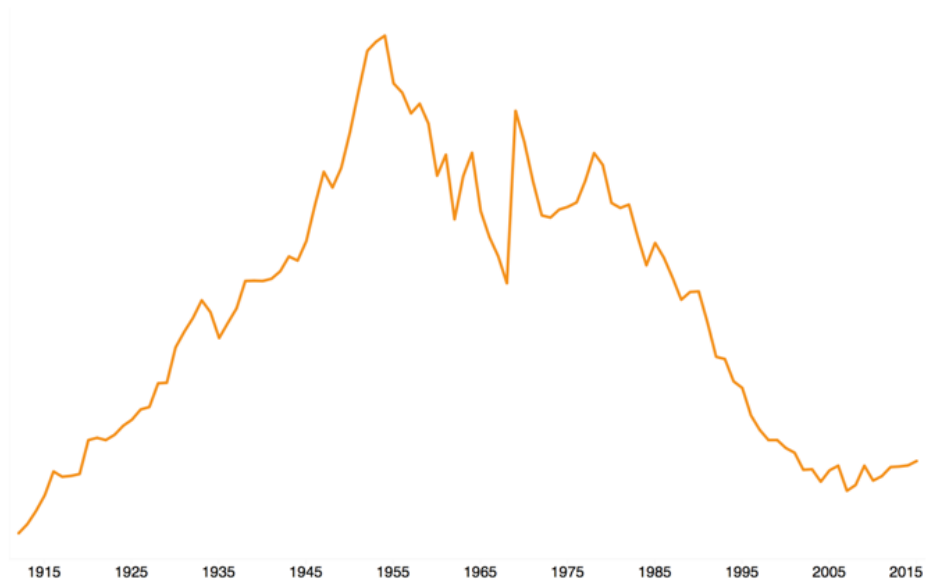
Figure 1. The number of SSI applicants more than quadrupled after 1990

1 plots child SSI caseloads from the program's inception in 1974 until 1994. For the first 15 years, the program grew slowly but steadily until about 300 000 children received assistance. After 1990, the number of applicants more than quadrupled and the acceptance rate climbed from one-third to over one half, allowing over 600 000 more children onto the SSI rolls. This liberalization

Add Annotation

Rise and Fall of the name **Neil** in the USA Births 1912-2015

Source: data.gov

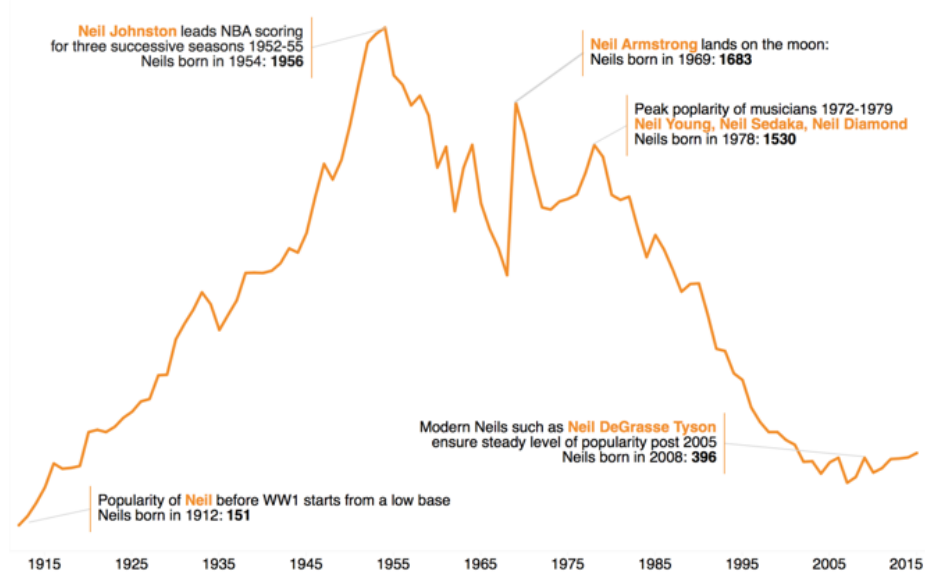


Visualisation: @theneilrichards

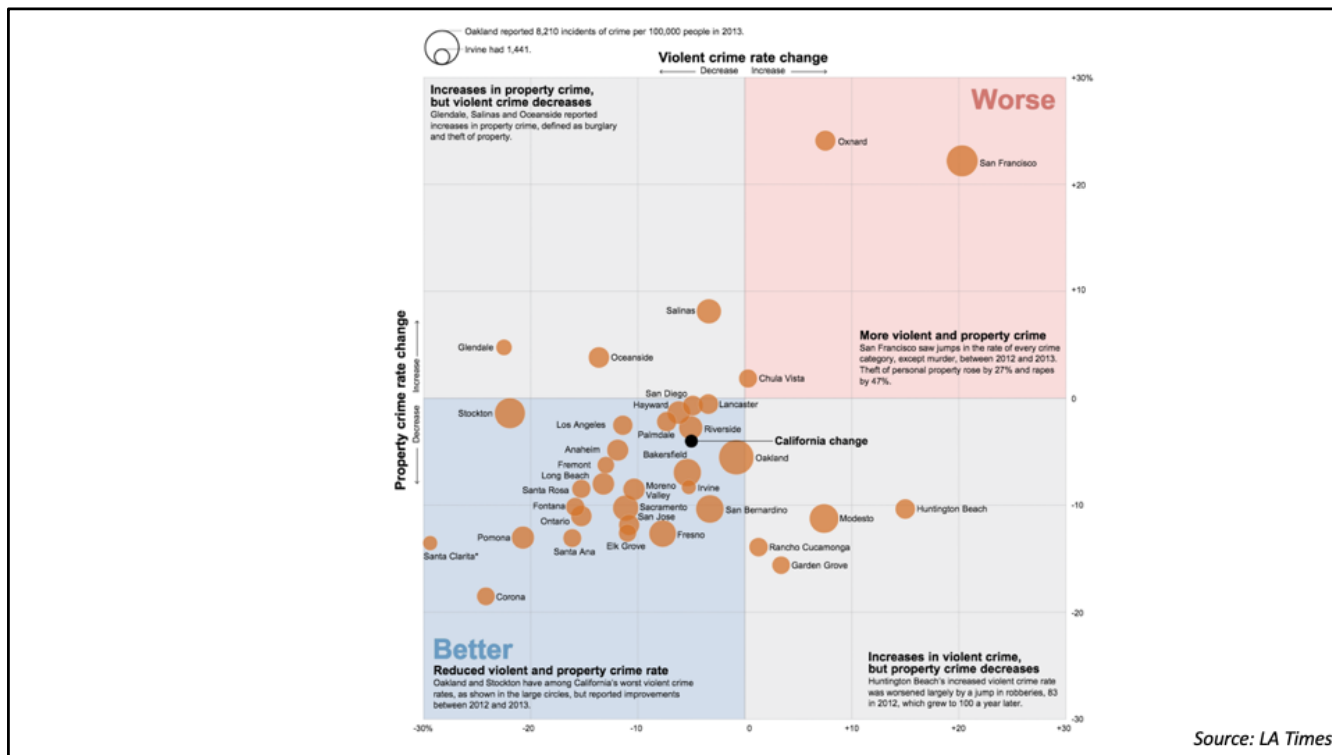
<https://questionsindataviz.com/2018/01/06/is-white-space-always-your-friend/>

Rise and Fall of the name **Neil** in the USA Births 1912-2015

Source: data.gov

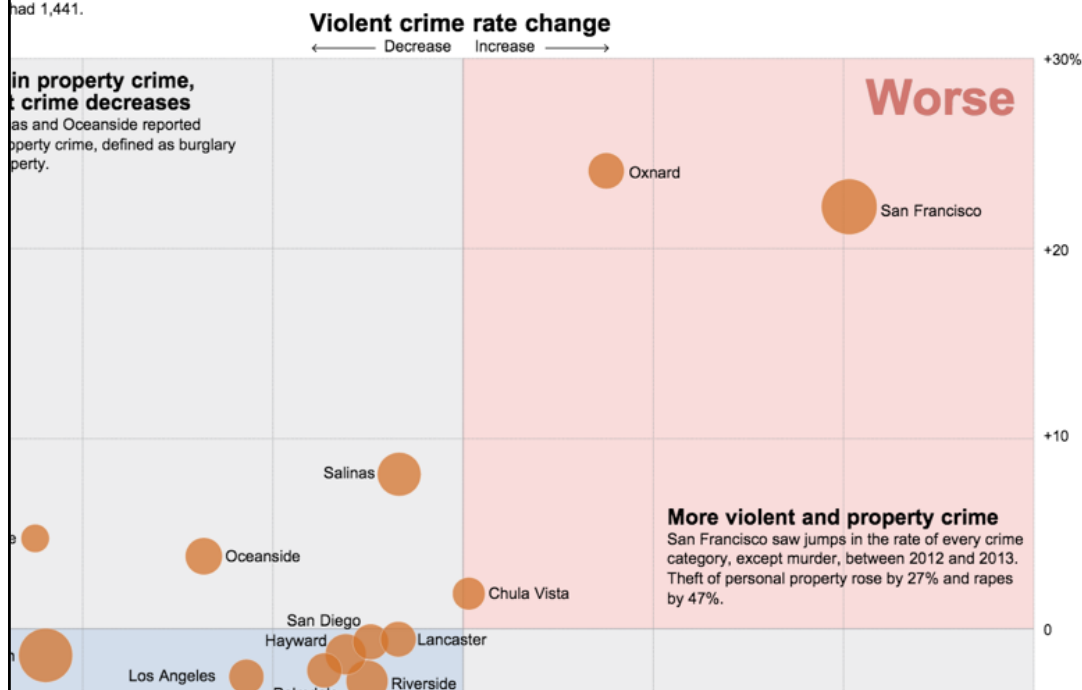


Visualisation: @theneilrichards



<http://graphics.latimes.com/california-crime-2013/>

nd reported 8,210 incidents of crime per 100,000 people in 2013.
had 1,441.



Source: LA Times

Remove Legends

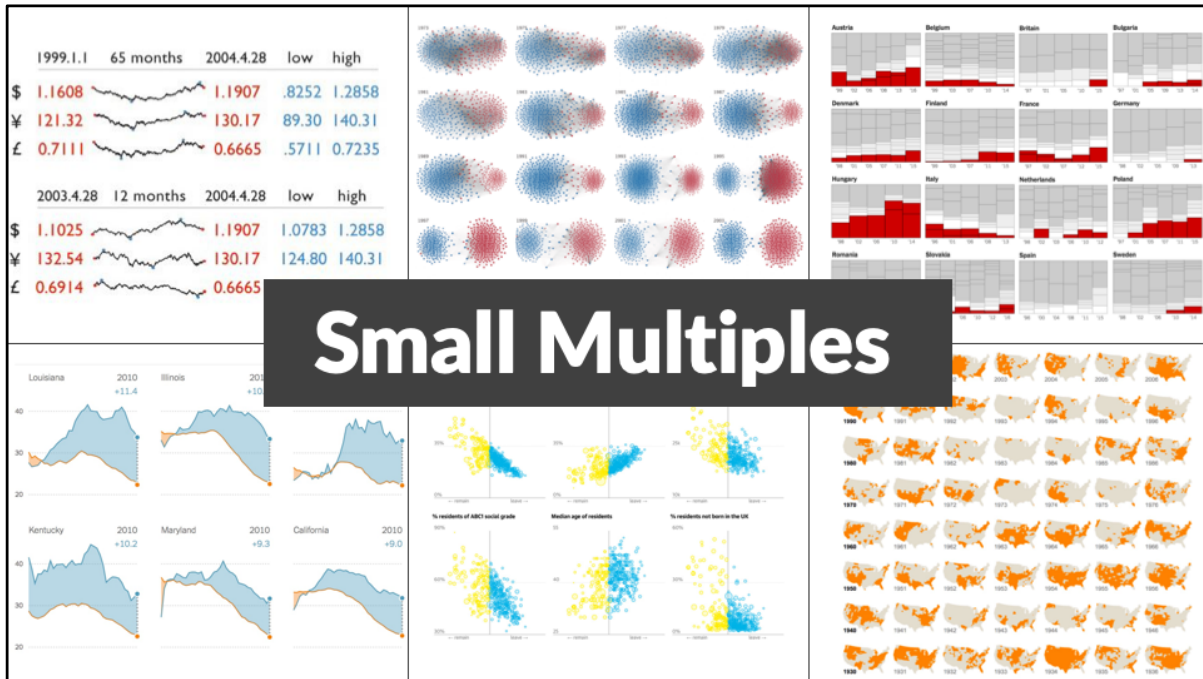


Make Titles Active



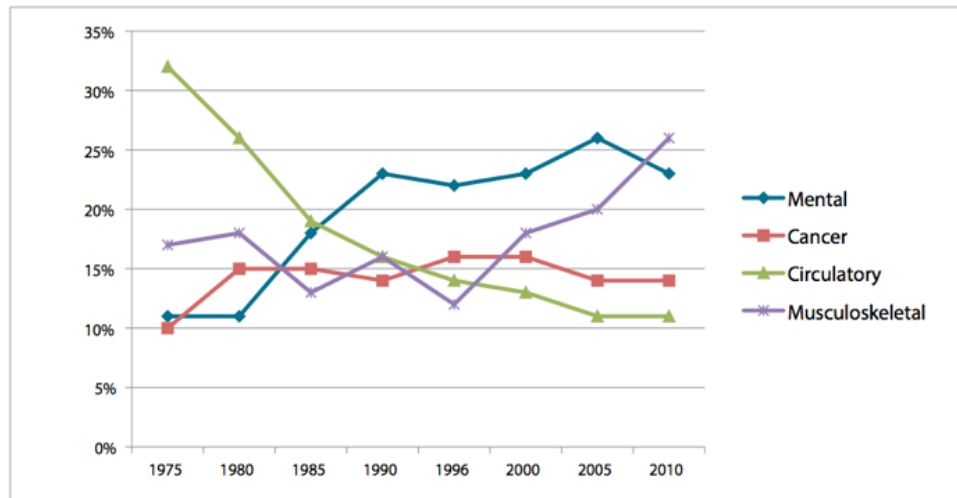
Add Annotation

separated ← *integrated*

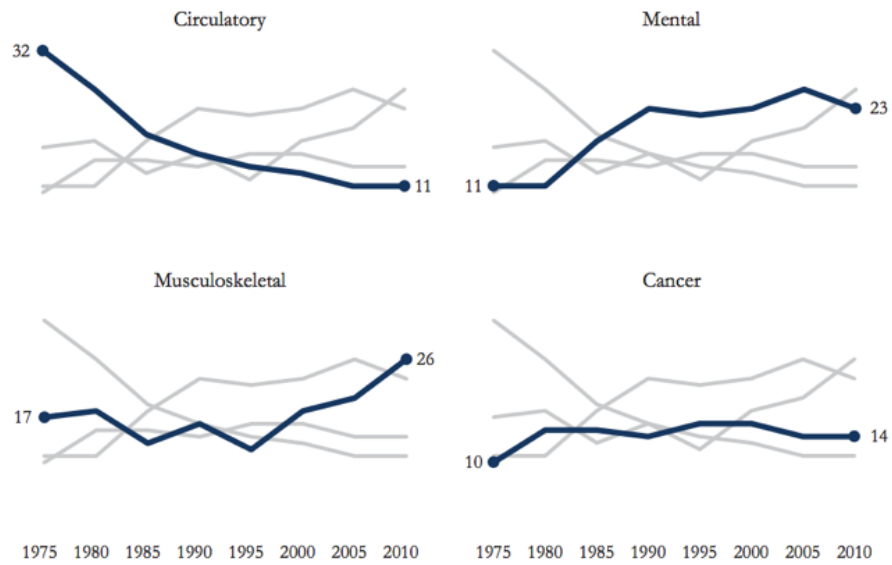


<http://www.nytimes.com/interactive/2013/12/20/health/a-racial-gap-in-breast-cancer-deaths.html>
https://www.washingtonpost.com/news/wonk/wp/2015/04/23/a-stunning-visualization-of-our-divided-congress/?utm_term=.7ded46bcf9e4
<http://www.nytimes.com/interactive/2012/07/20/us/drought-footprint.html>
https://www.nytimes.com/interactive/2016/05/22/world/europe/europe-right-wing-austria-hungary.html?_r=0

27. Initial DI Worker Awards by Major Cause of Disability—Calendar Years 1975-2010

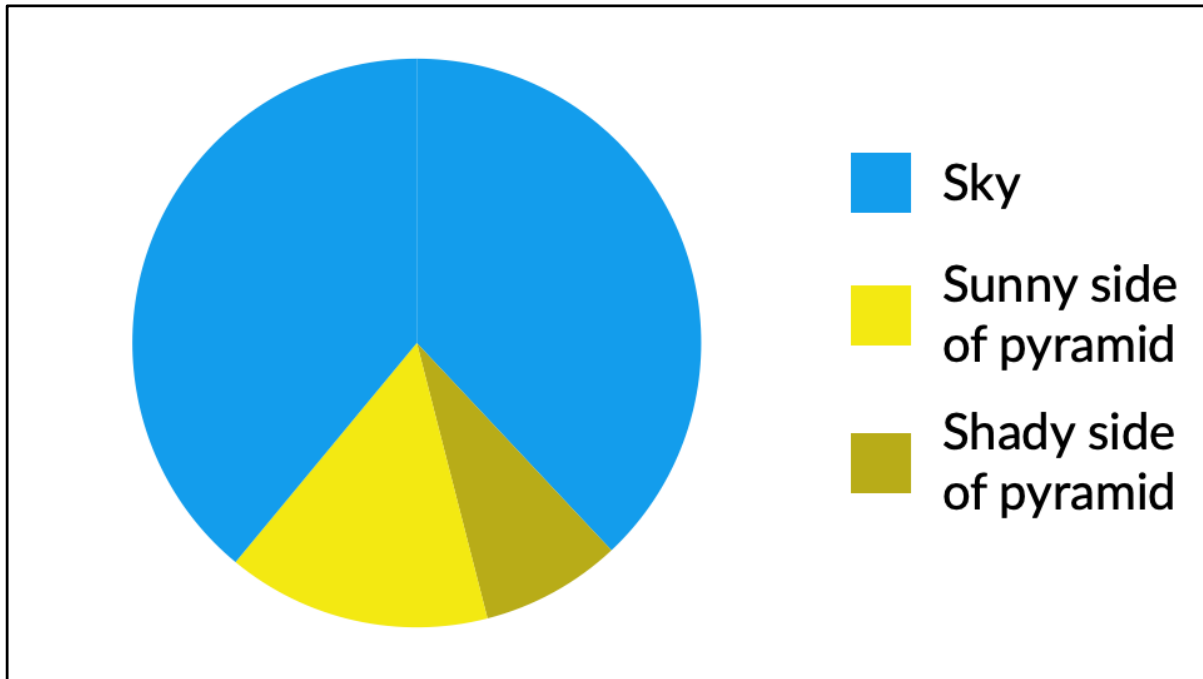


**Initial DI Worker Awards by Major Cause of Disability—
Calendar Years 1975–2010**
(Percent)

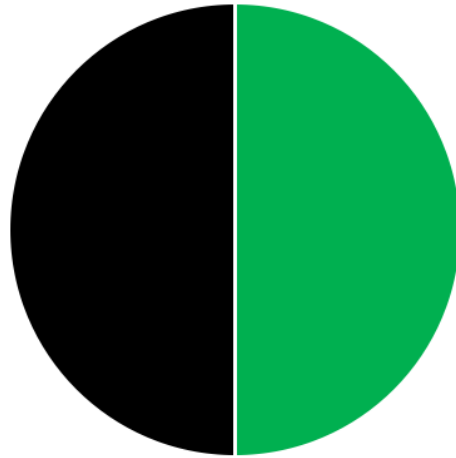


circles → *bars*



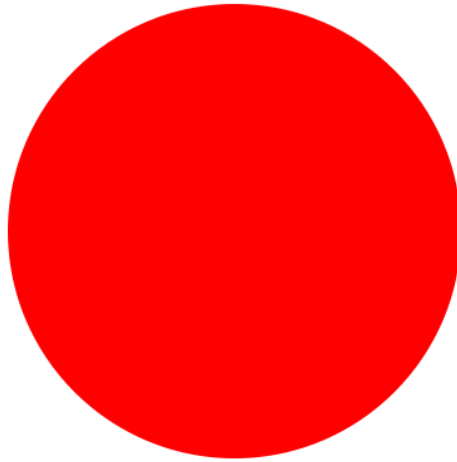


Options According to Yoda

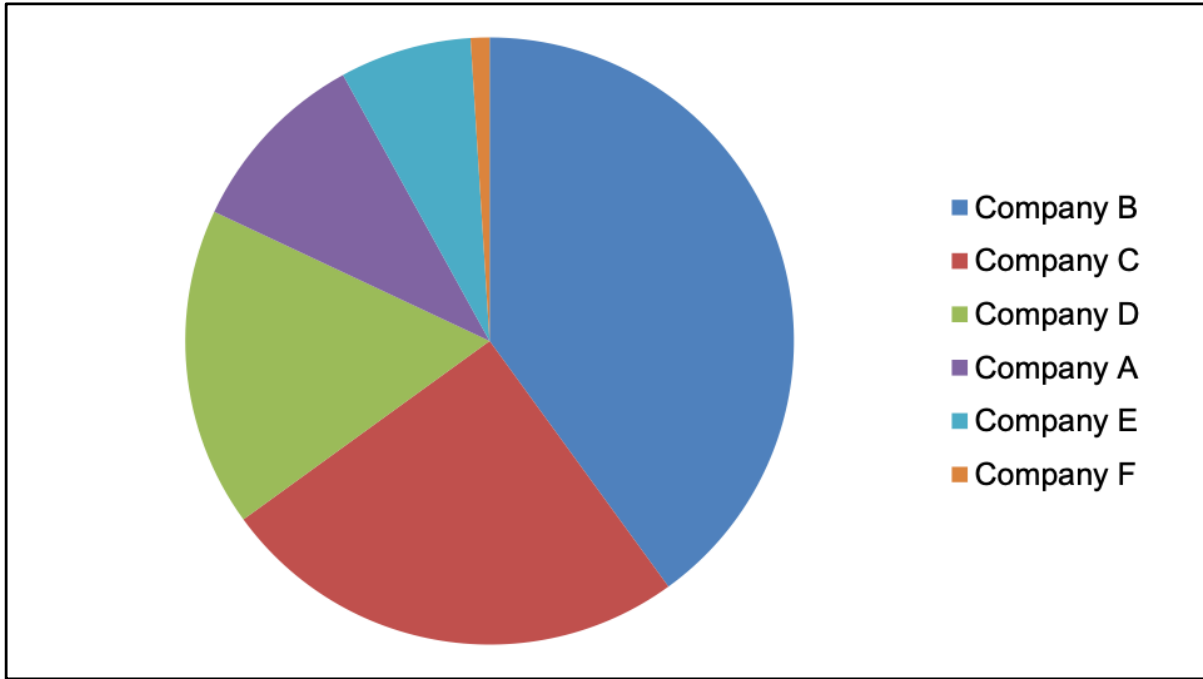


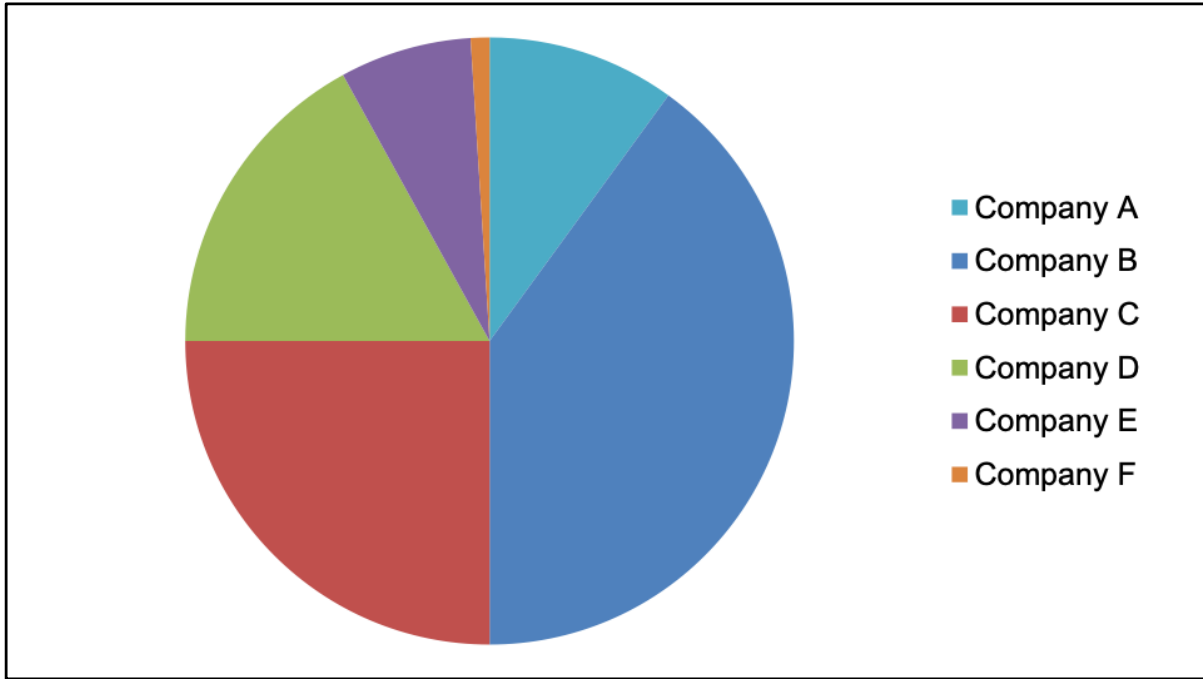
- Do.
- Do Not.
- Try.

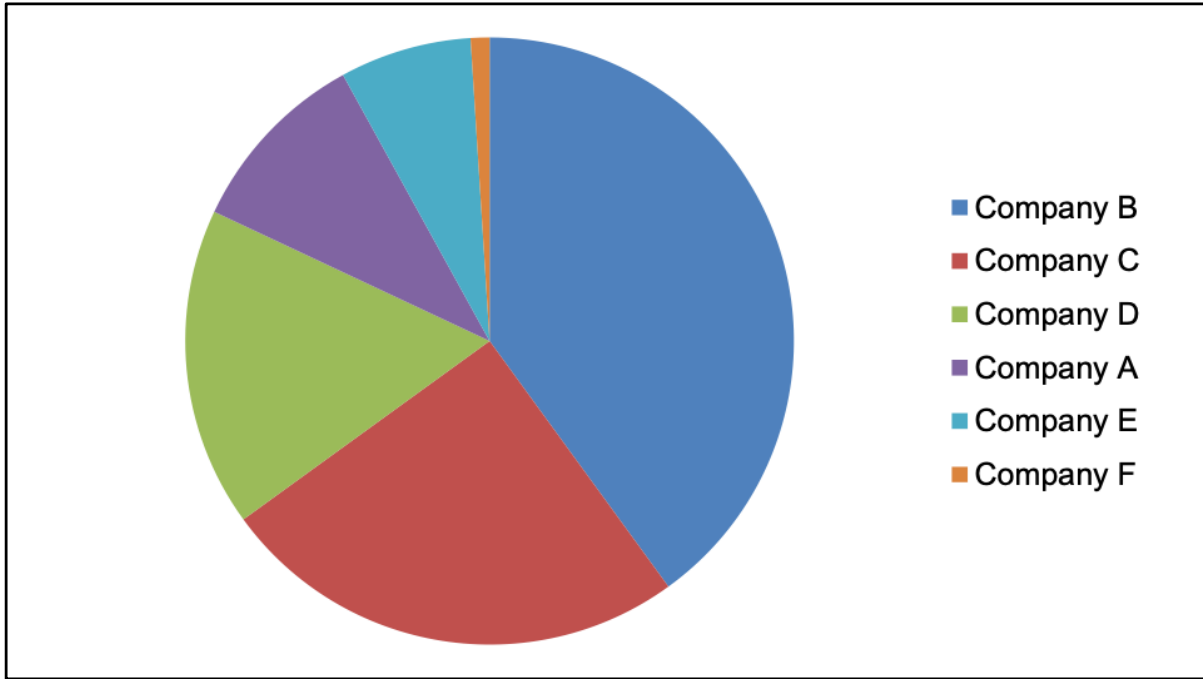
Japan

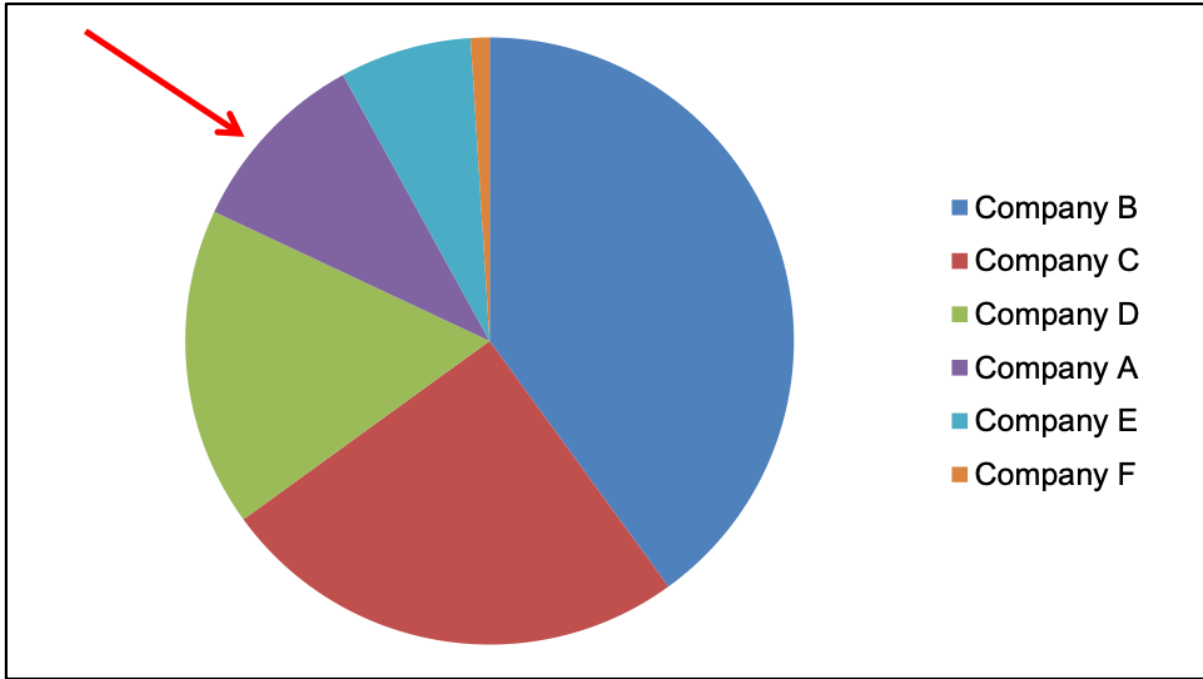


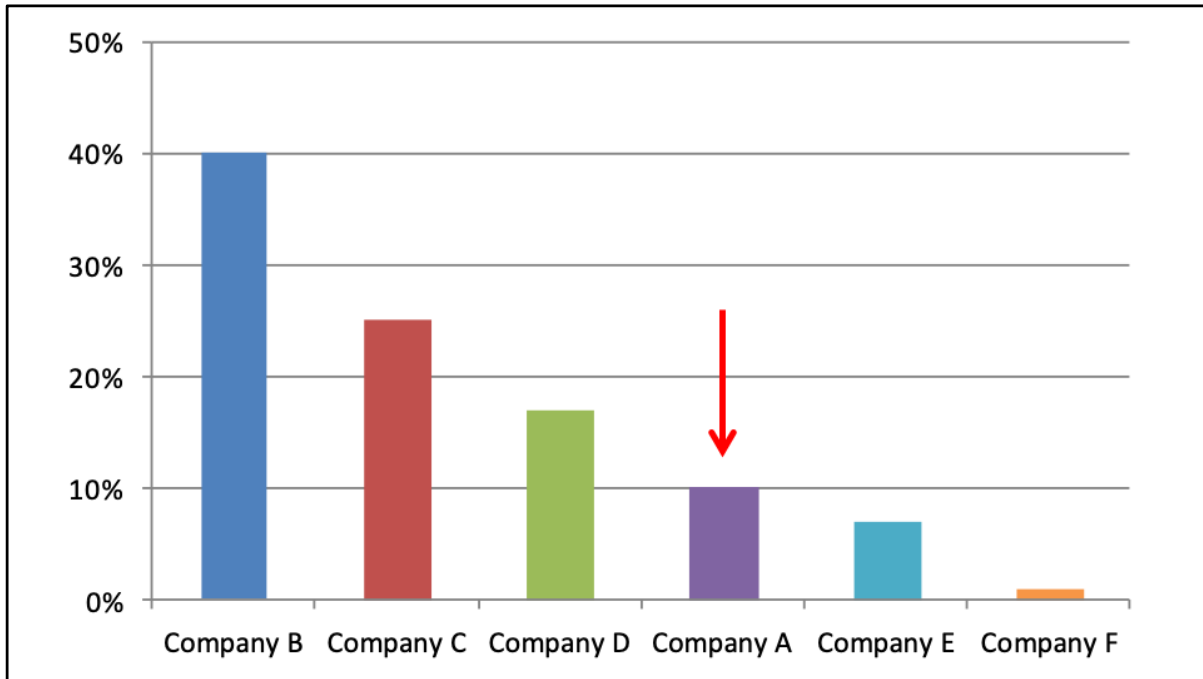
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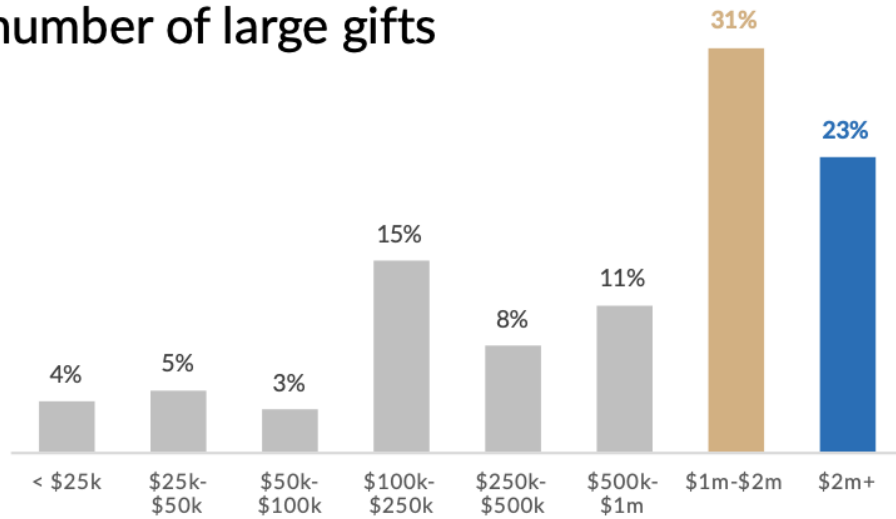




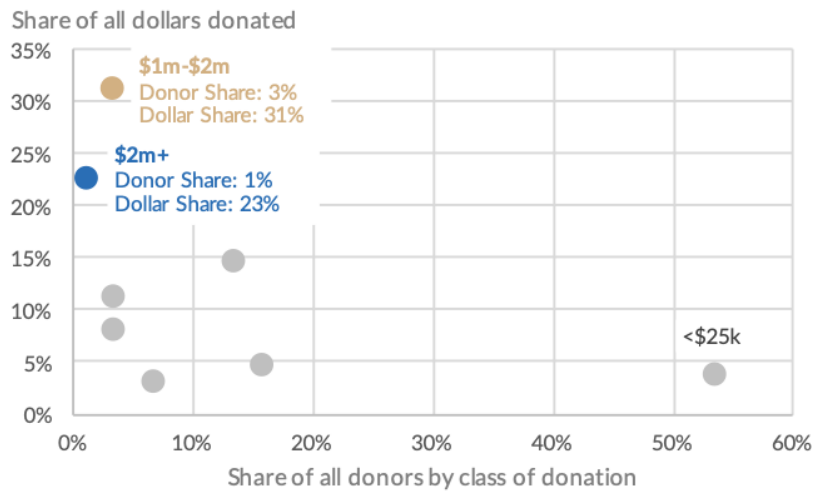


However...

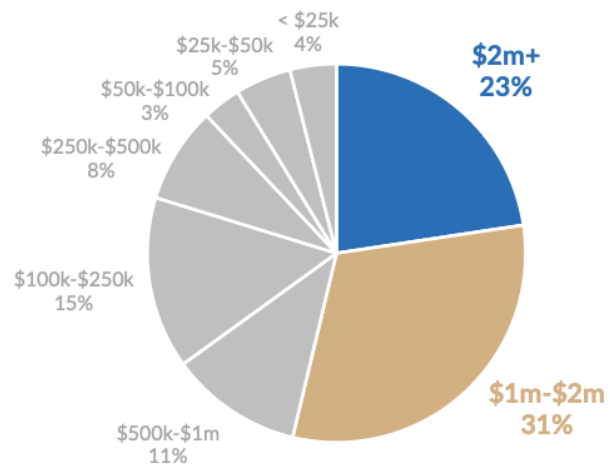
Most funds come from a small number of large gifts



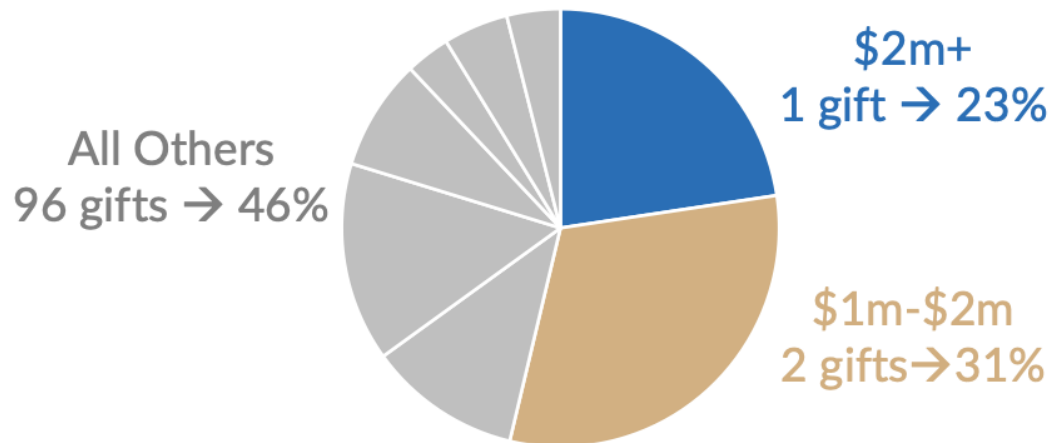
Most funds come from a small number of large gifts



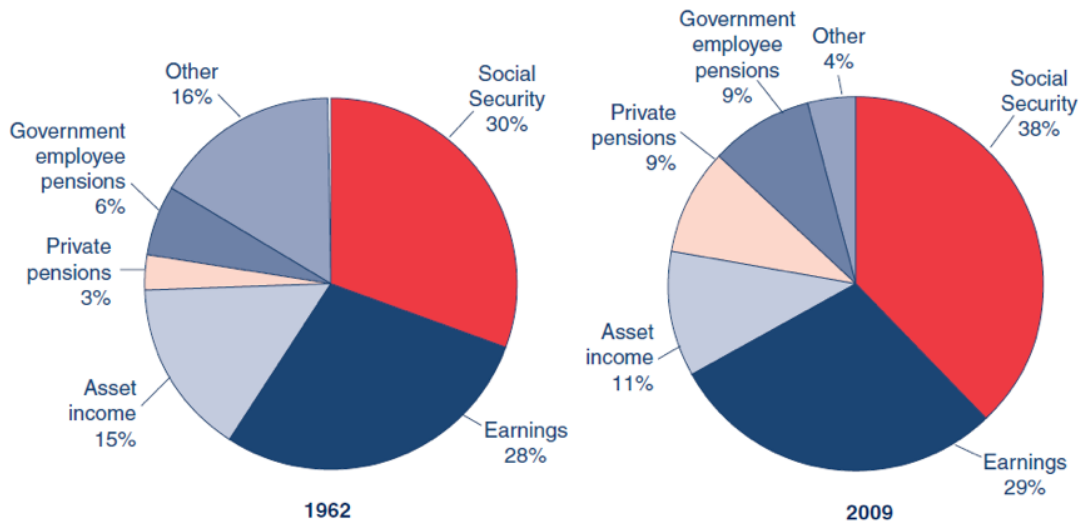
Most funds come from a small number of large gifts



Most funds come from a small number of large gifts

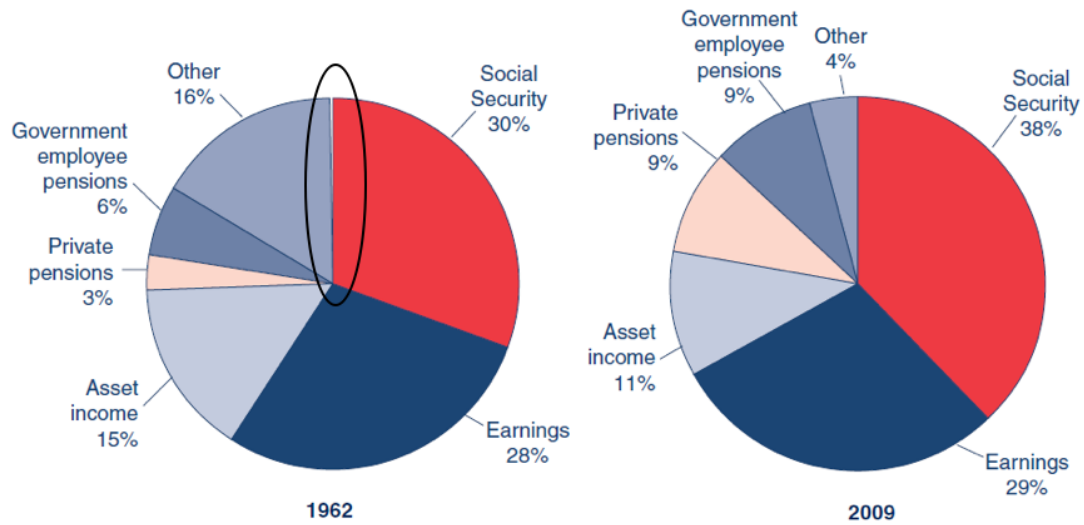


Aggregate income, by source



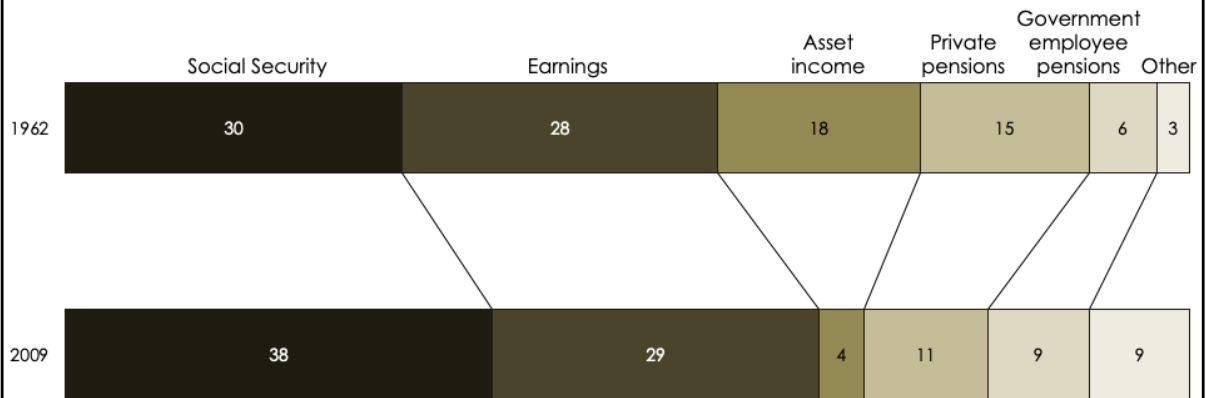
Source: Social Security Administration, *Fast Facts and Figures*, 2011

Aggregate income, by source

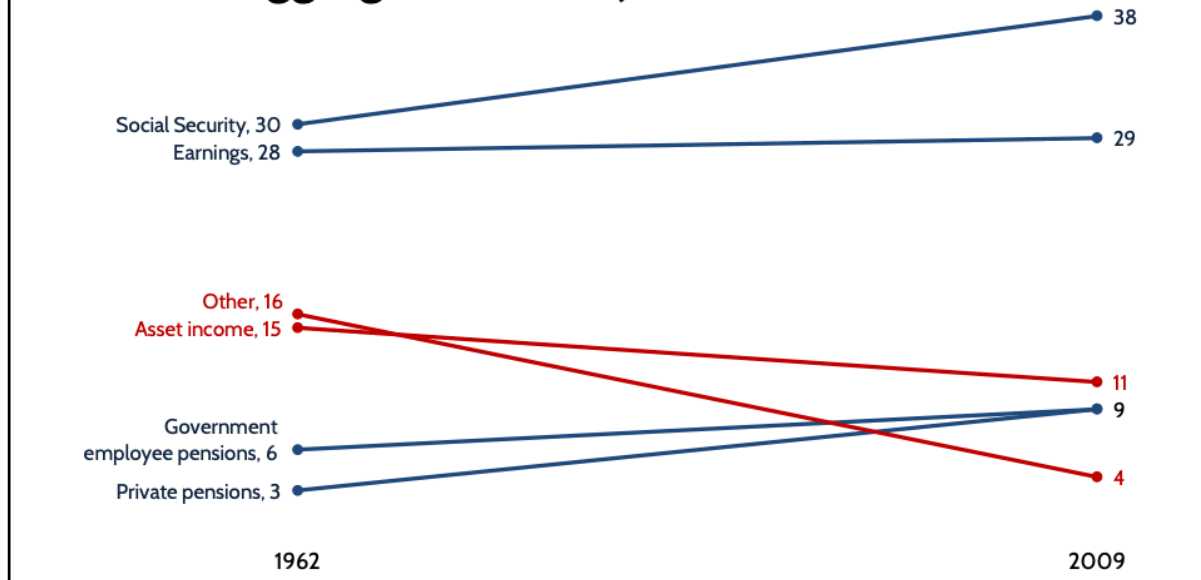


Source: Social Security Administration, *Fast Facts and Figures*, 2011

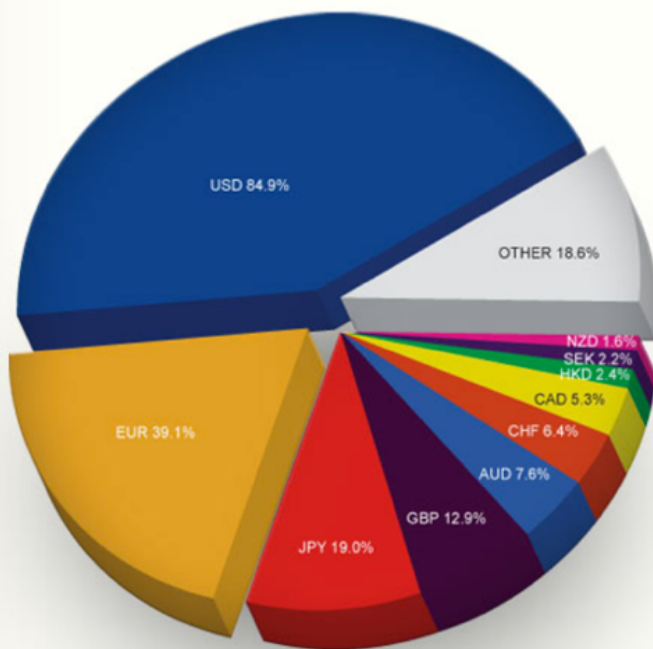
Shares of Aggregate Income, 1962 and 2009



Shares of Aggregate Income, 1962 and 2009

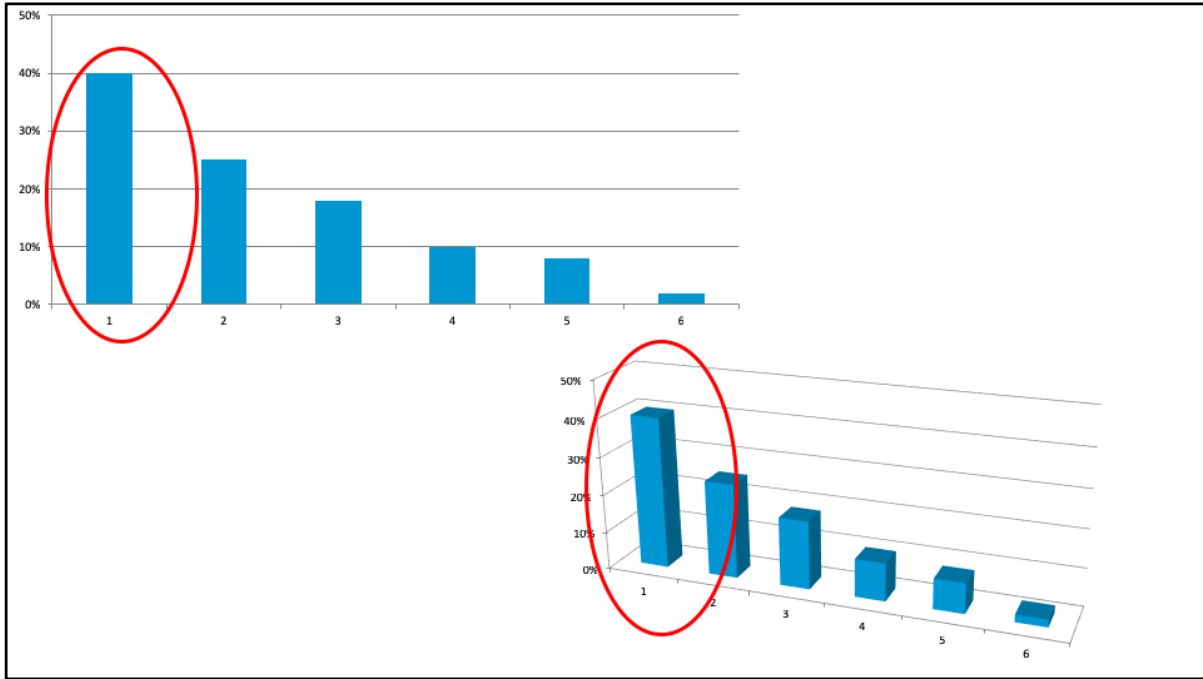


3D \longrightarrow *2D*

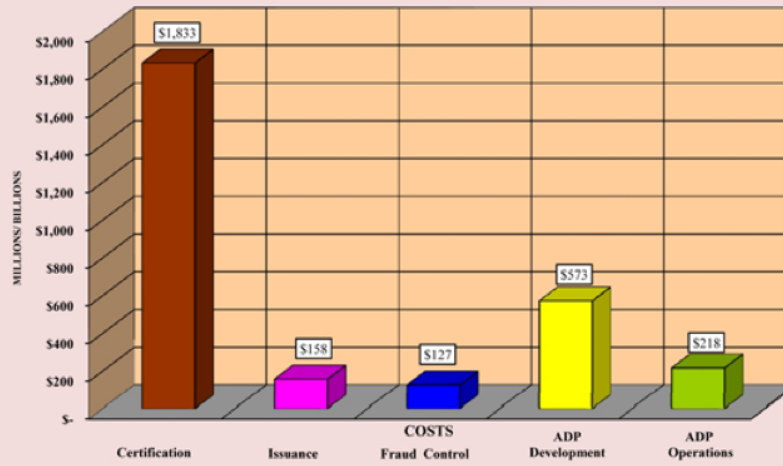


MOST Traded CURRENCIES

Market % in 2010

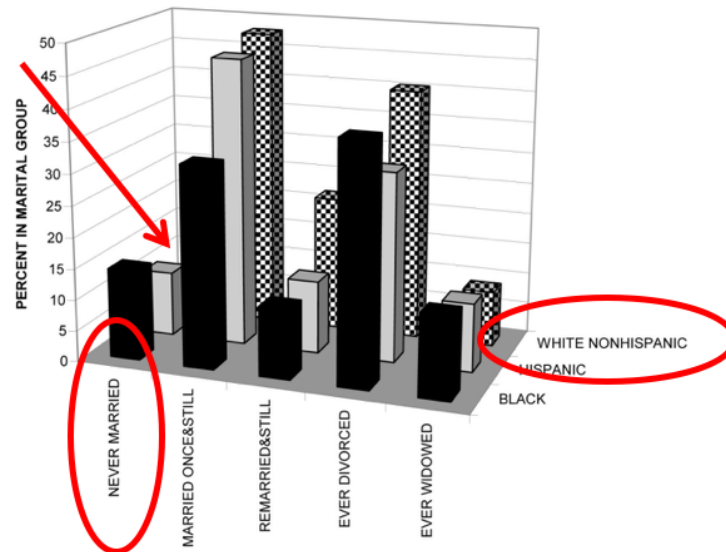


FEDERAL SHARE OF SELECTED STATE ADMINISTRATIVE COSTS FY 2010



Source: U.S. Department of Agriculture, Supplemental Assistance Program (SNAP) State Activity Report, Federal Fiscal Year 2010

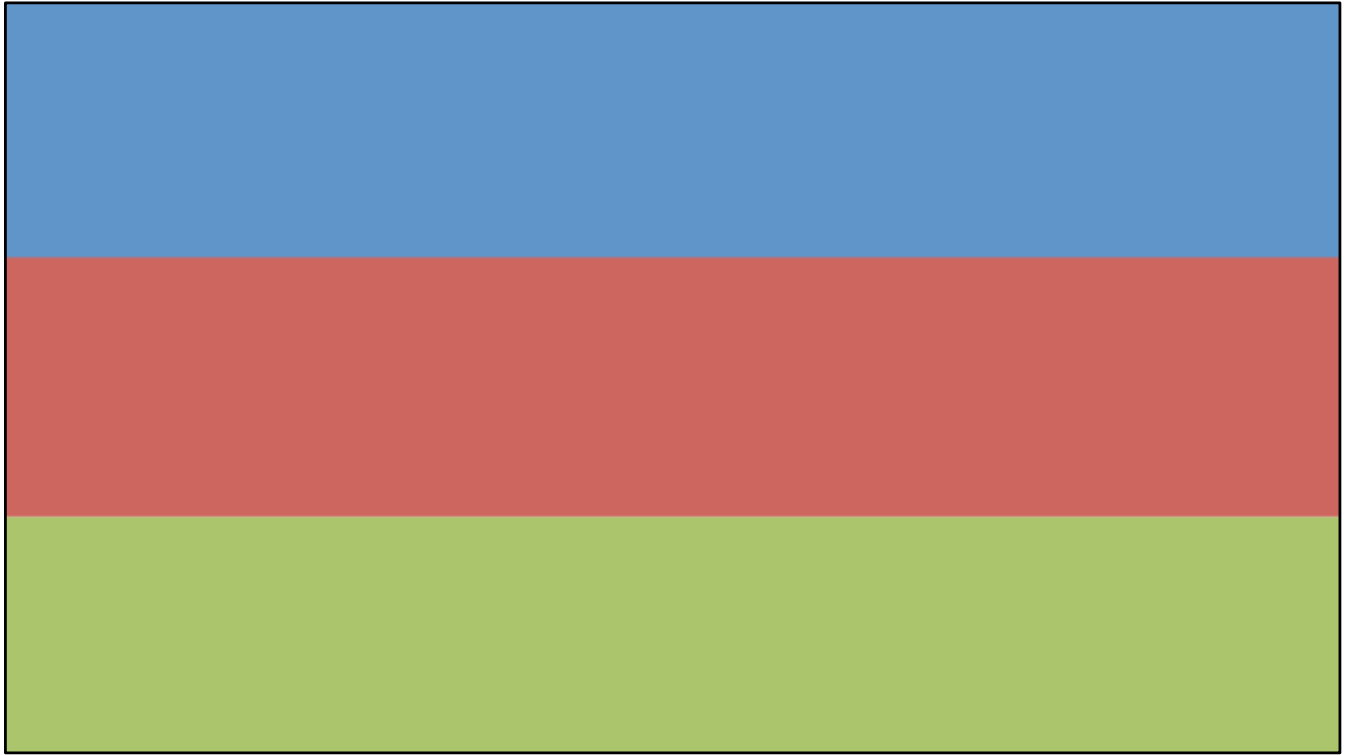
Figure 5: Marital Status by Race, women 50-59



Source: Karen Holden and Angela Fontes, *Journal of Women, Politics, & Policy*, 2009

<https://www.tandfonline.com/doi/abs/10.1080/15544770902901817>

default  *new*



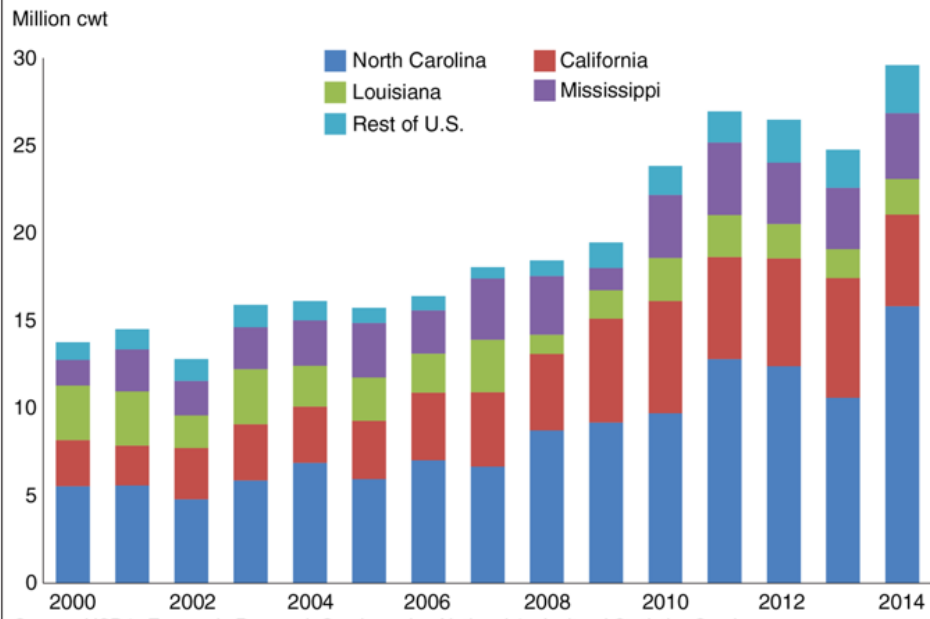


Avoid Default Colors



Avoid Default Colors

U.S. sweet potato production by State, 2000-2014



Color Blindness

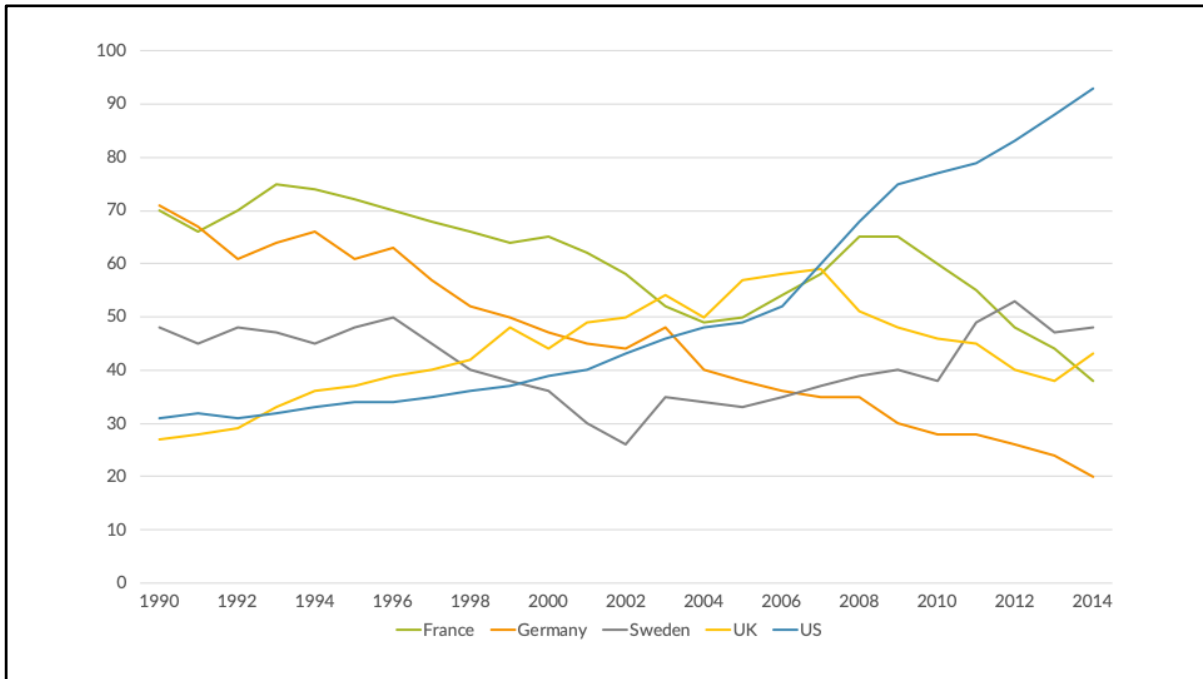


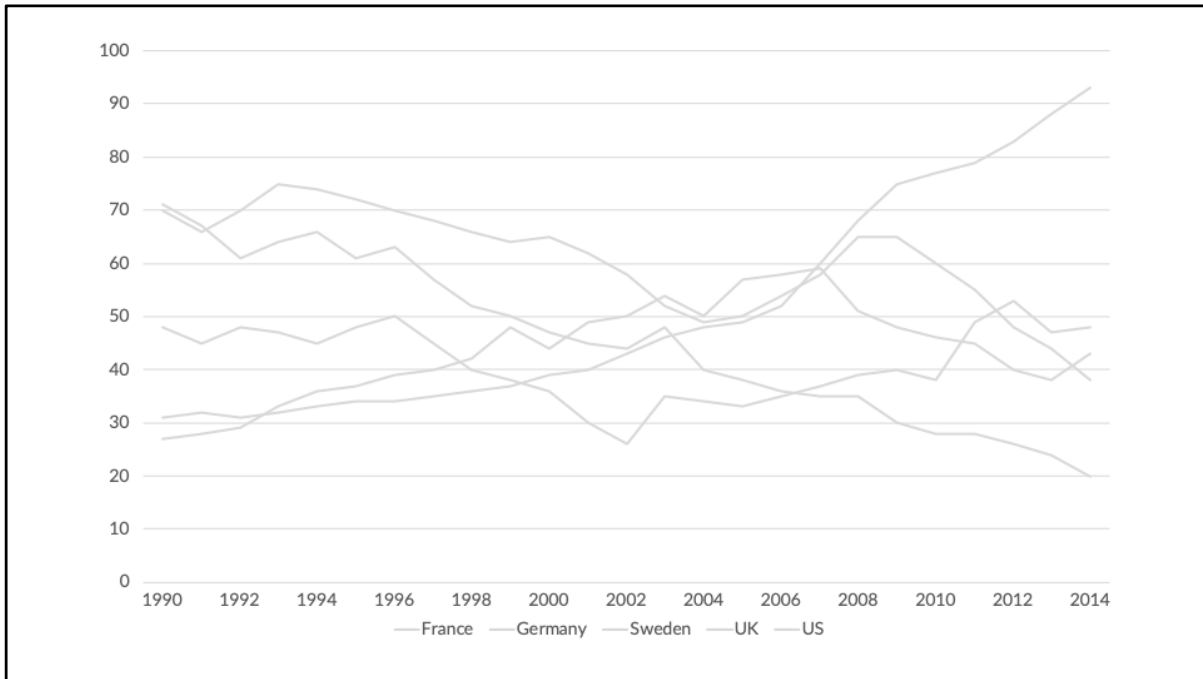
Source: Nathan Yau, Data Points: Visualization That Means Something

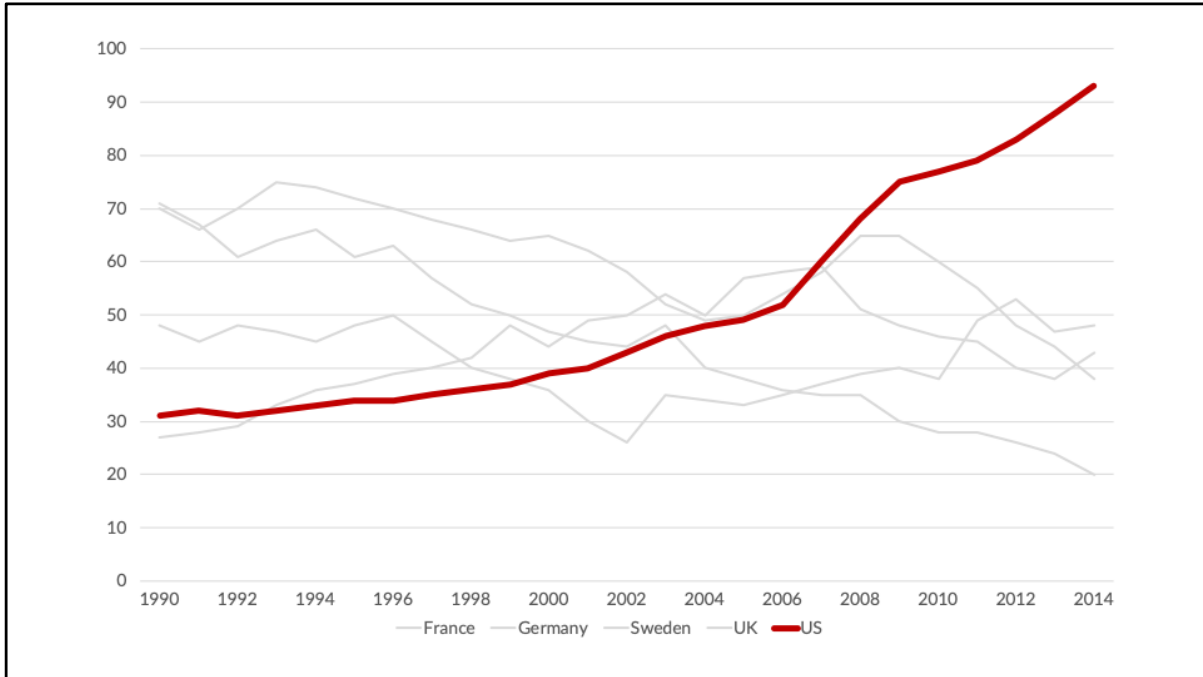
Start with Gray

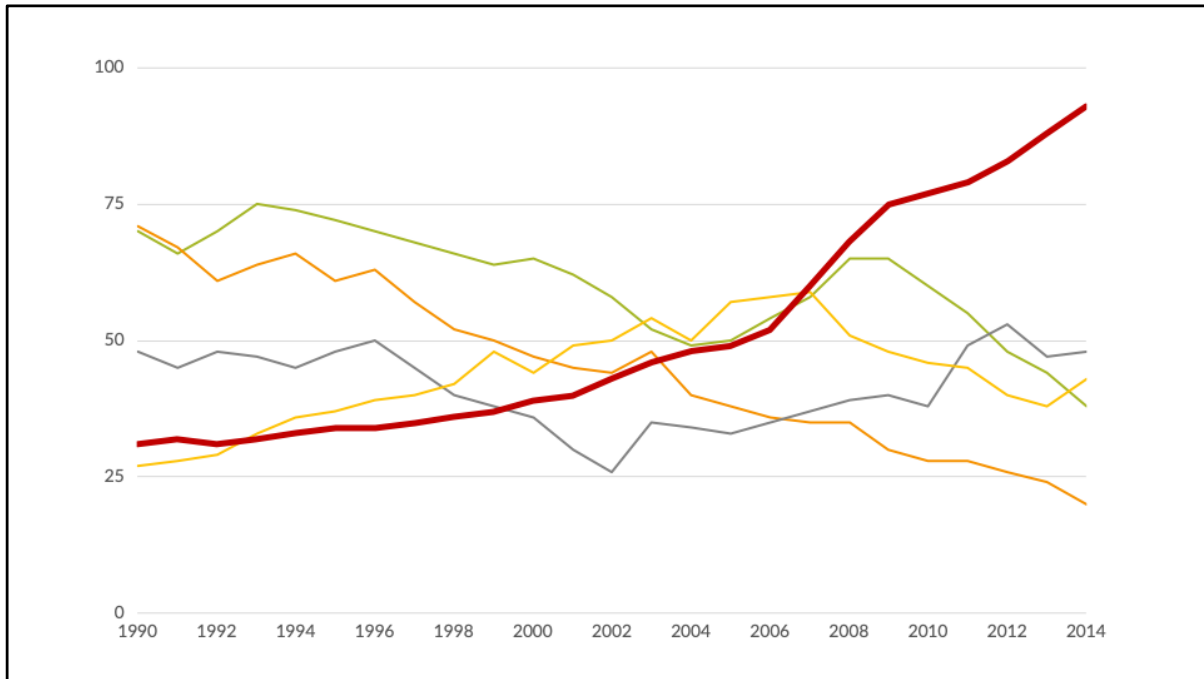


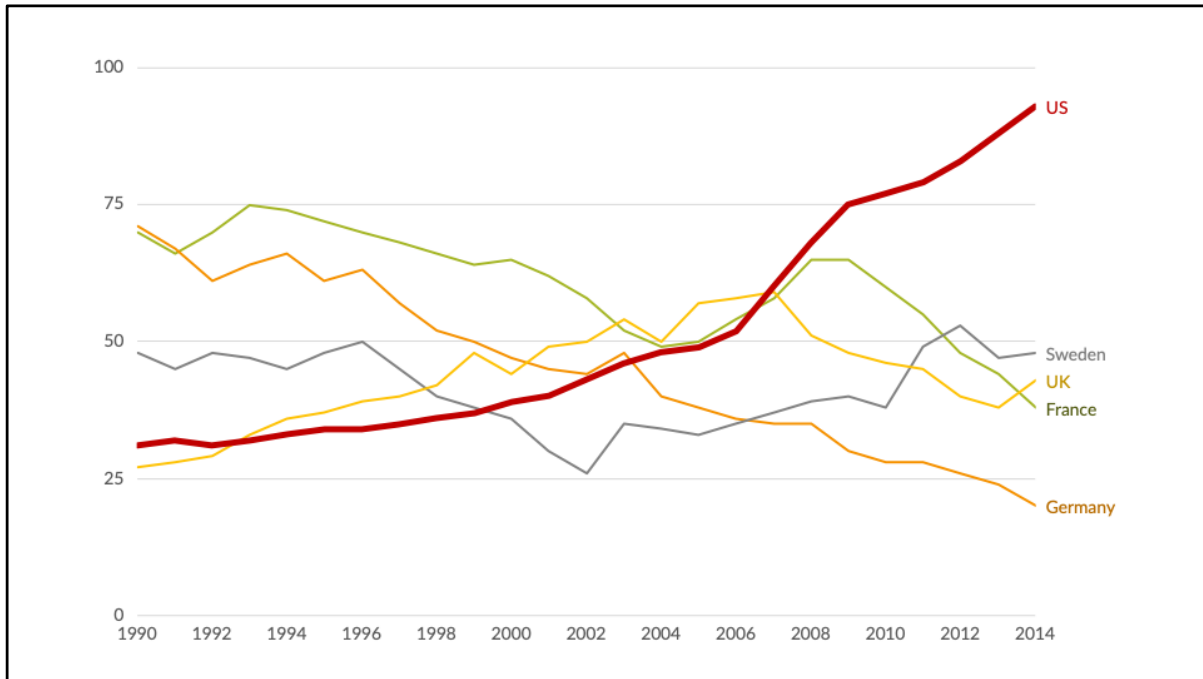
<https://unsplash.com/photos/FSAC8EQEeNE>





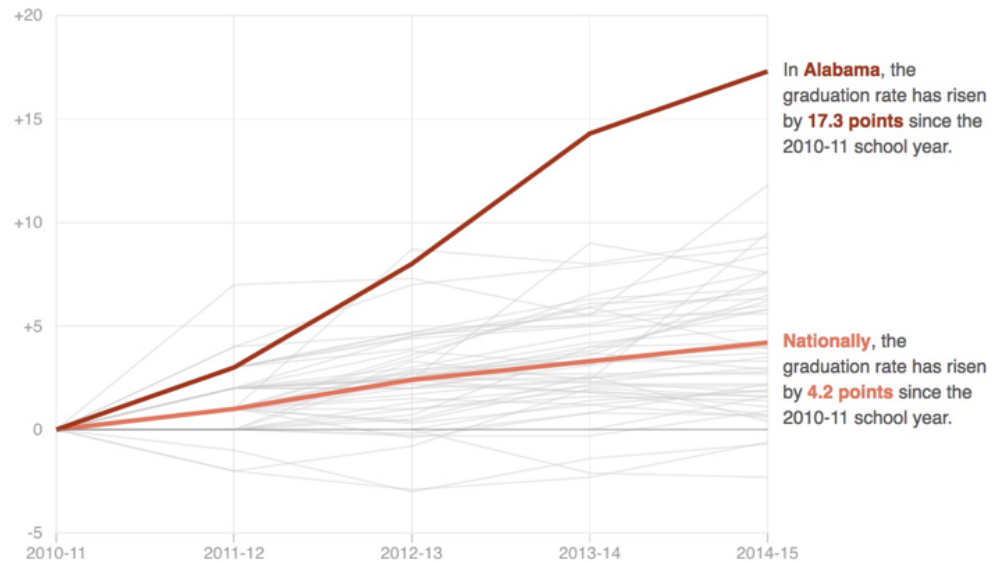






Alabama's Grad Rate Gains Far Outpace Those Of Other States

Cumulative percentage point change since the 2010-2011 school year

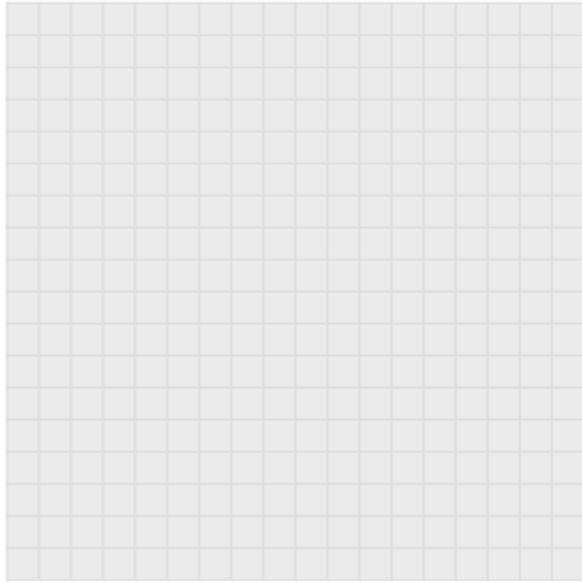


Source: NPR

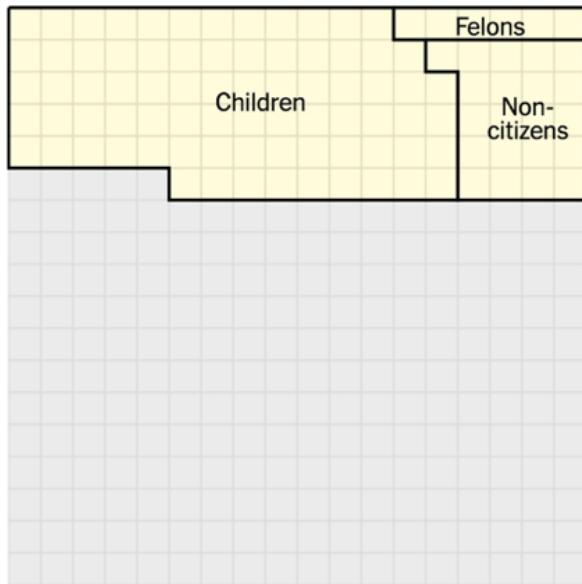
<http://www.npr.org/sections/ed/2016/12/19/505729524/alabama-admits-its-high-school-graduation-rate-was-inflated>



http://www.nytimes.com/interactive/2016/08/01/us/elections/nine-percent-of-america-selected-trump-and-clinton.html?_r=0

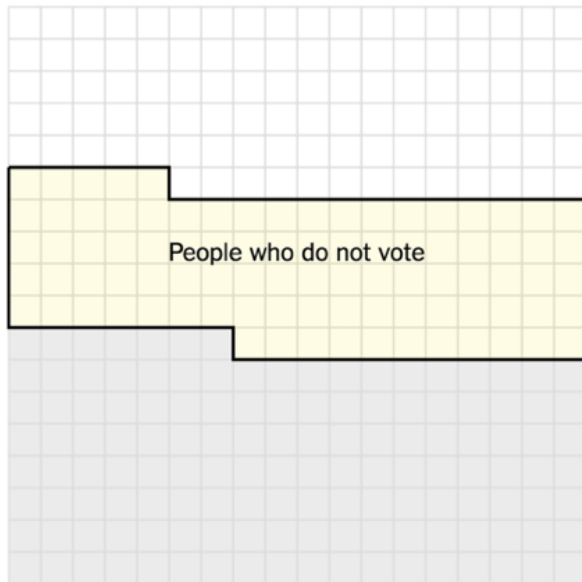


The United States is home to 324 million people. Each square here represents 1 million people.



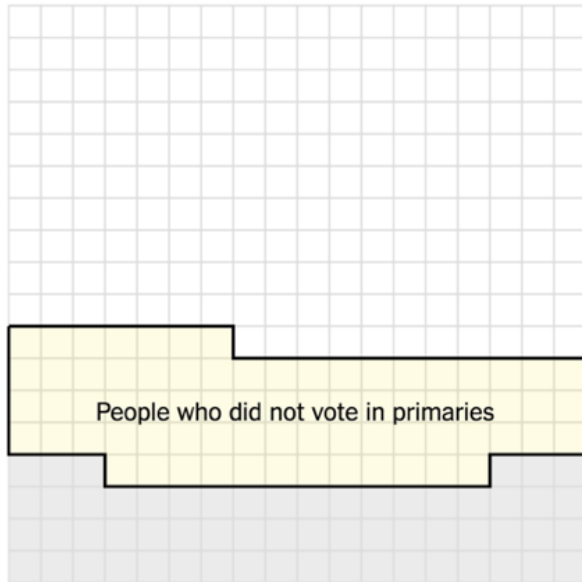
103 million of them are children, noncitizens or ineligible felons, and they do not have the right to vote.

Estimates for ineligible felons are from 2010.



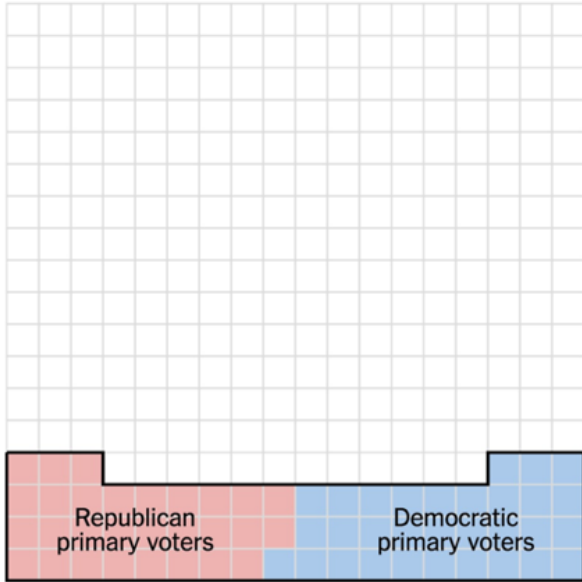
88 million eligible adults do not vote at all, even in general elections.

Based on the share of eligible adults who voted in the 2012 general election.

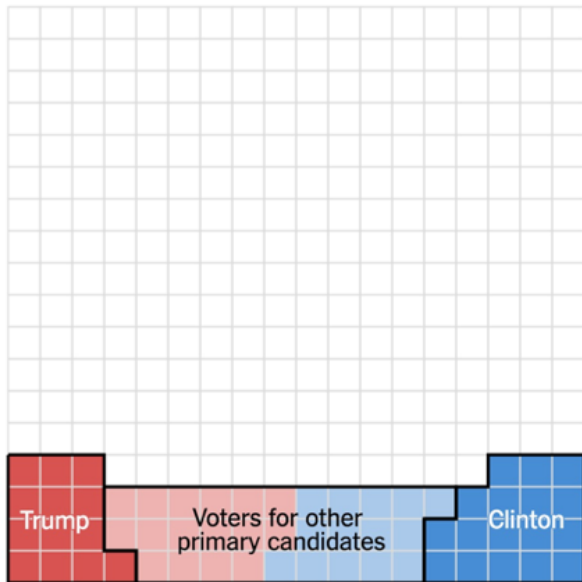


An additional 73 million did not vote in the primaries this year, but will most likely vote in the general election.

Does not include people who voted in caucuses, which have less reliable turnout numbers. A small percentage of people vote in primaries but not in general elections, and they are also not included.

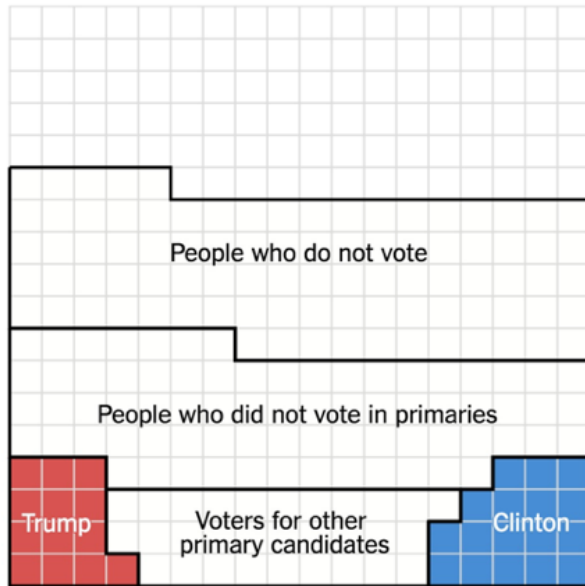


The remaining 60 million people voted in the primaries: about 30 million each for Republicans and Democrats.



But half of the primary voters chose other candidates. Just 14 percent of eligible adults — 9 percent of the whole nation — voted for either Mr. Trump or Mrs. Clinton.

The overall shares were about the same in 2008, the last cycle without an incumbent president running.



Mr. Trump and Mrs. Clinton will be working to win the votes of these three groups. Polls suggest they will be separated by just a handful of squares.

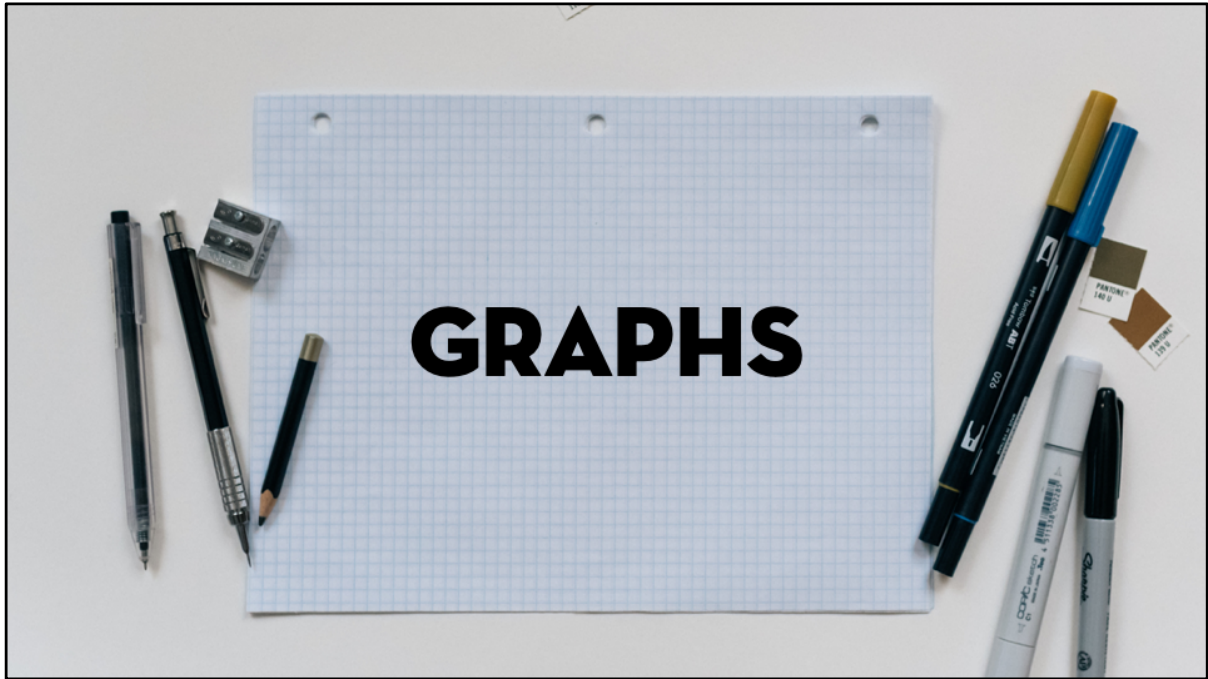
DATA

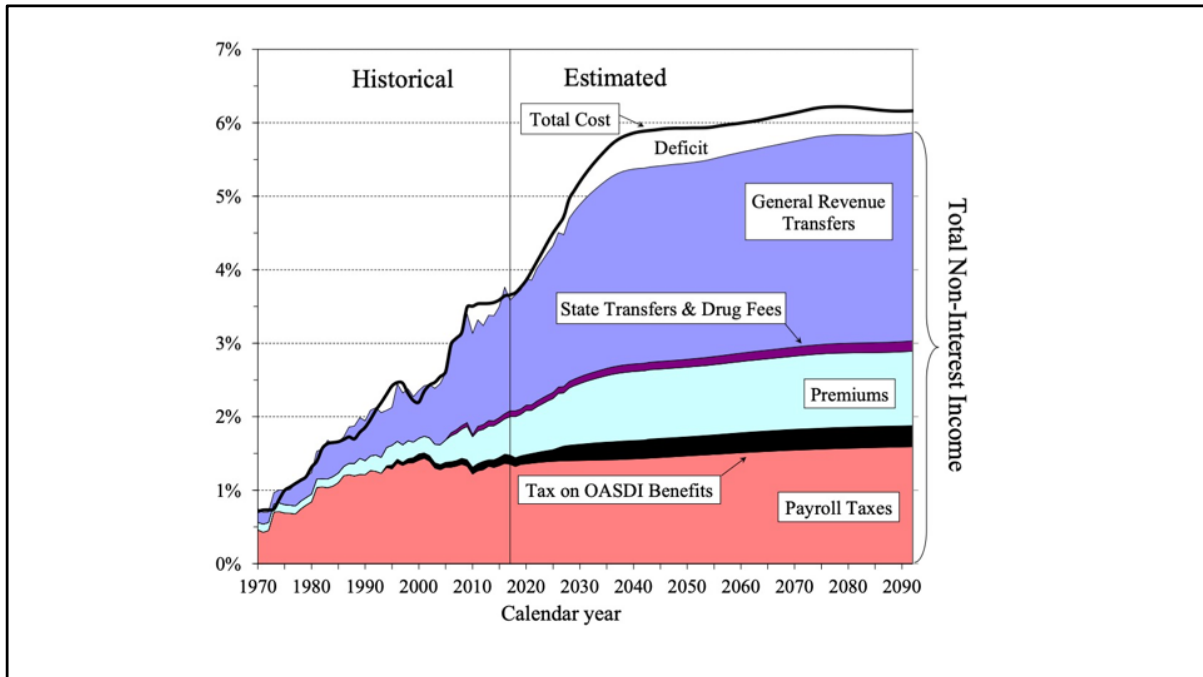


INSIGHT

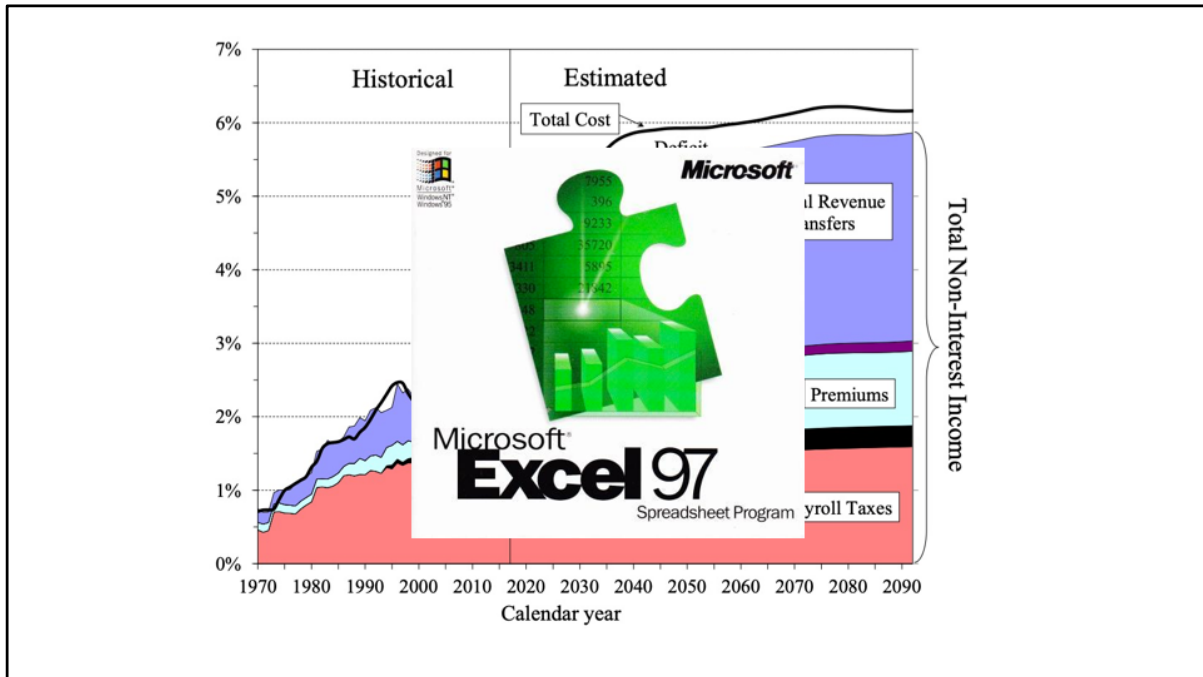
@jschwabish



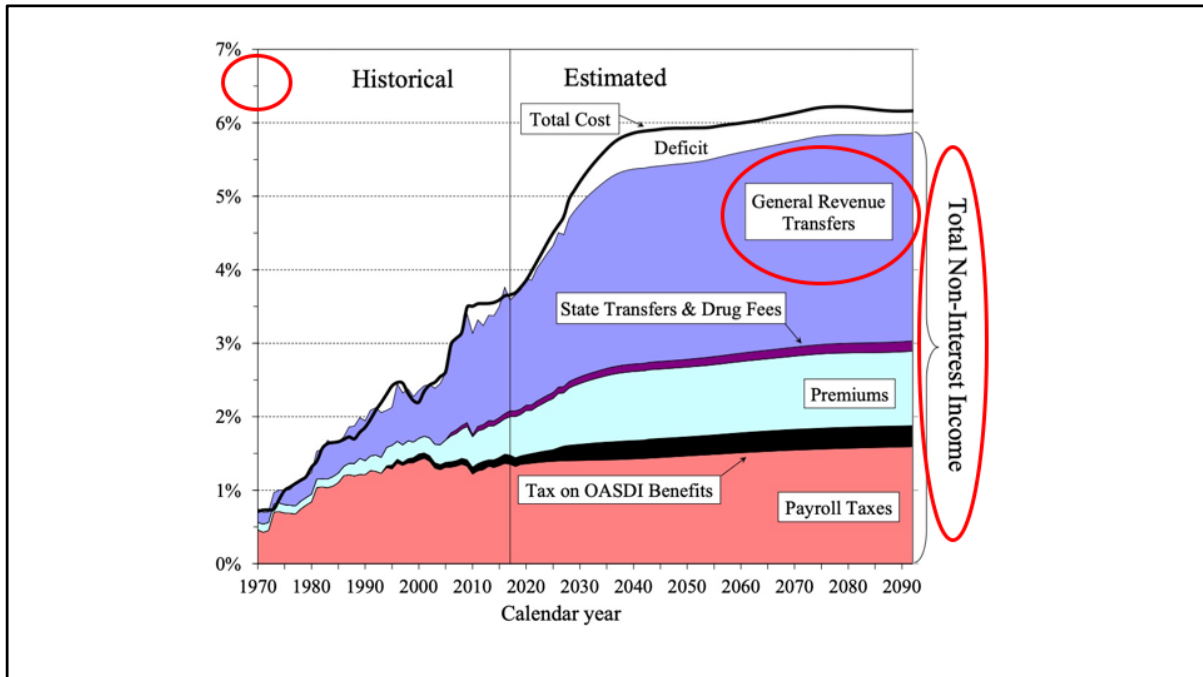




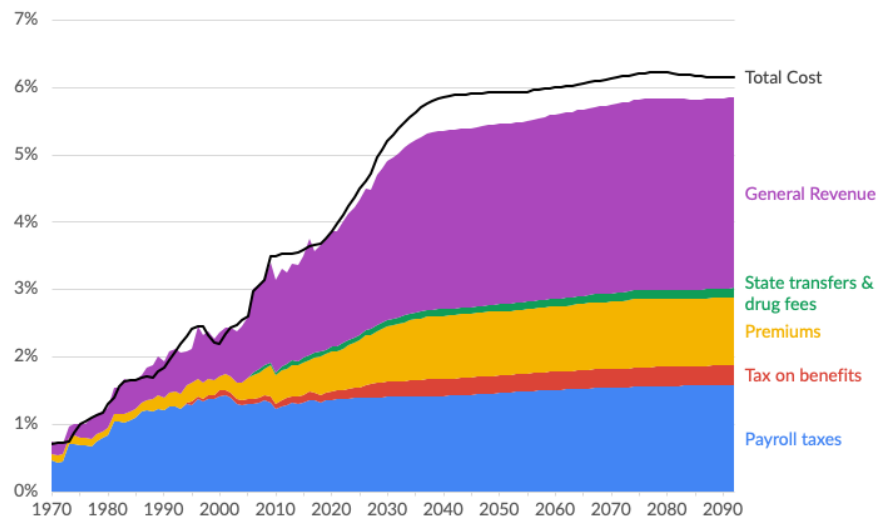
<https://www.ssa.gov/OACT/TRSUM/>
<https://www.ssa.gov/OACT/TRSUM/tr18summary.pdf>

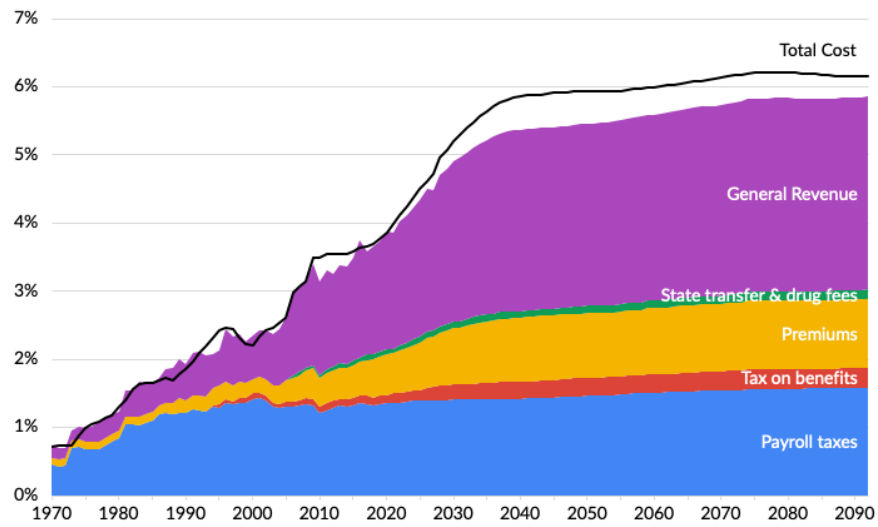


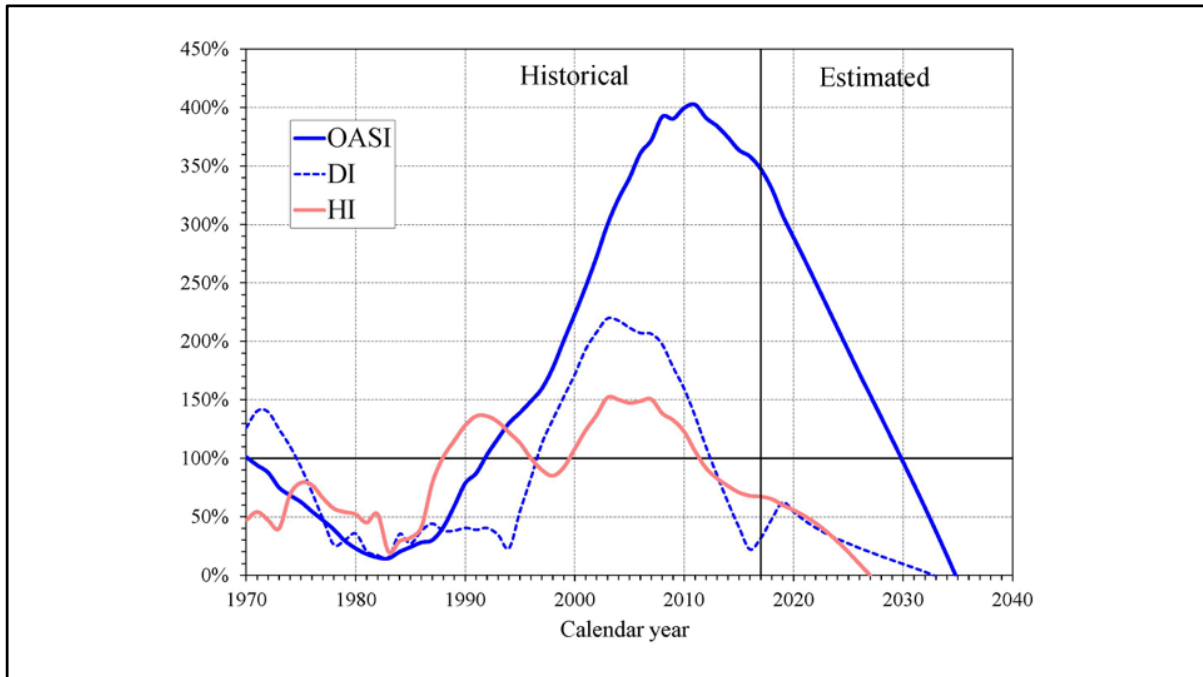
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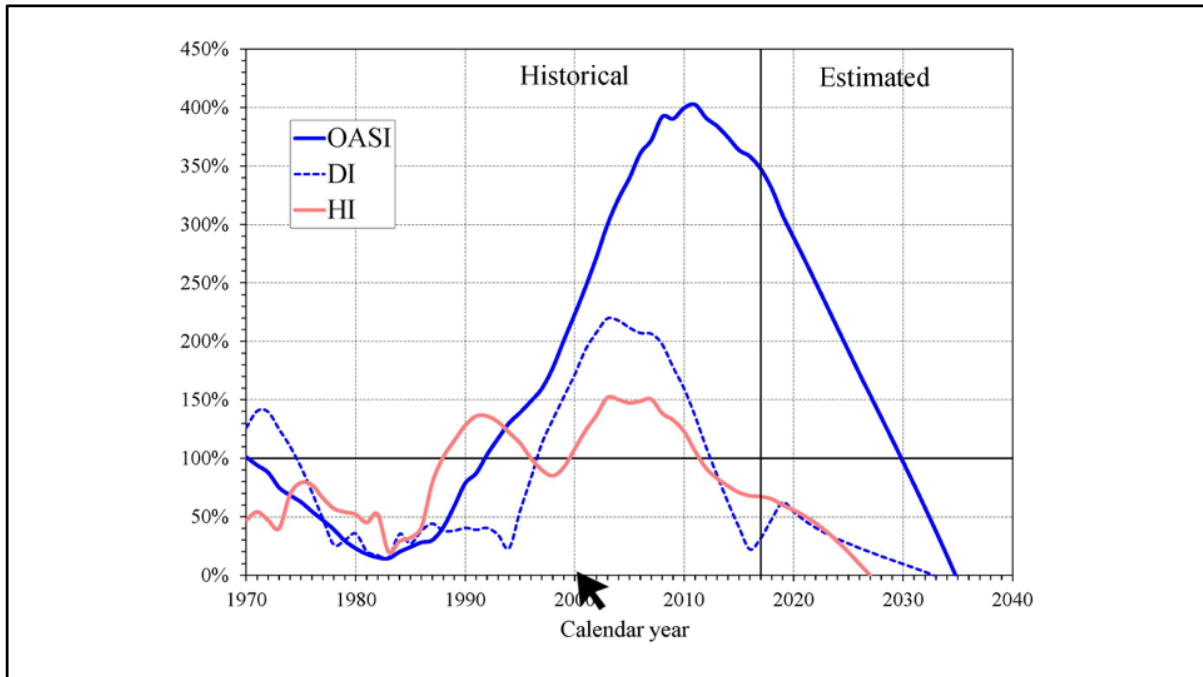
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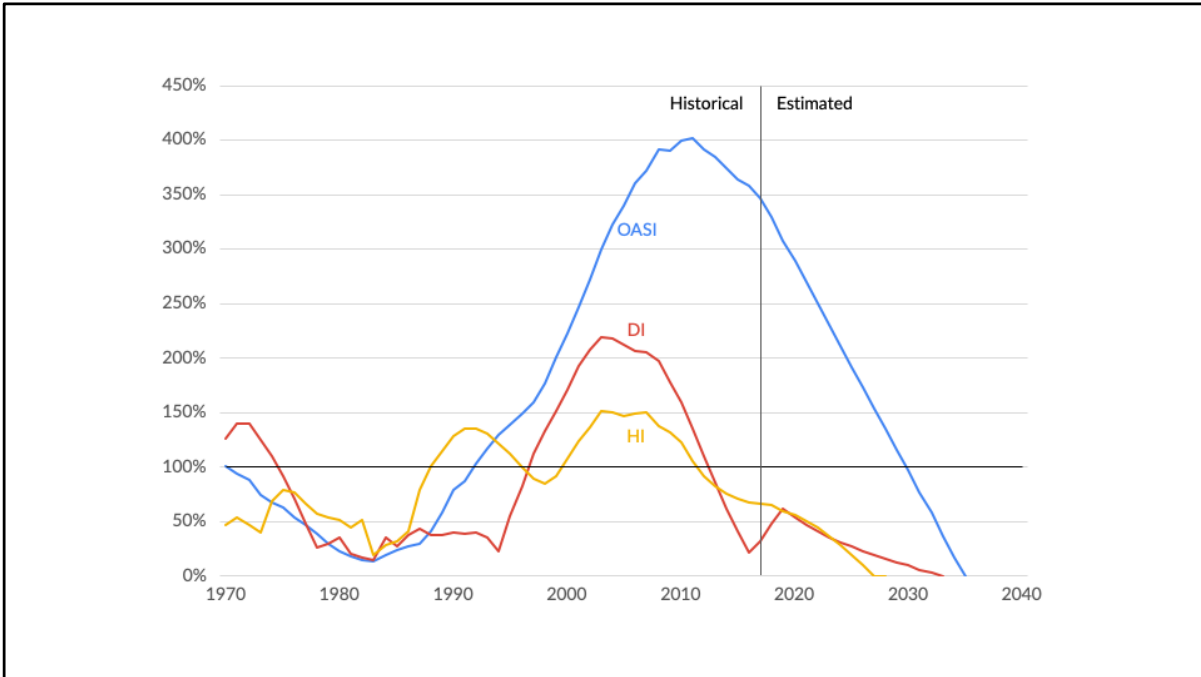
Status of the Social Security and Medicare Programs

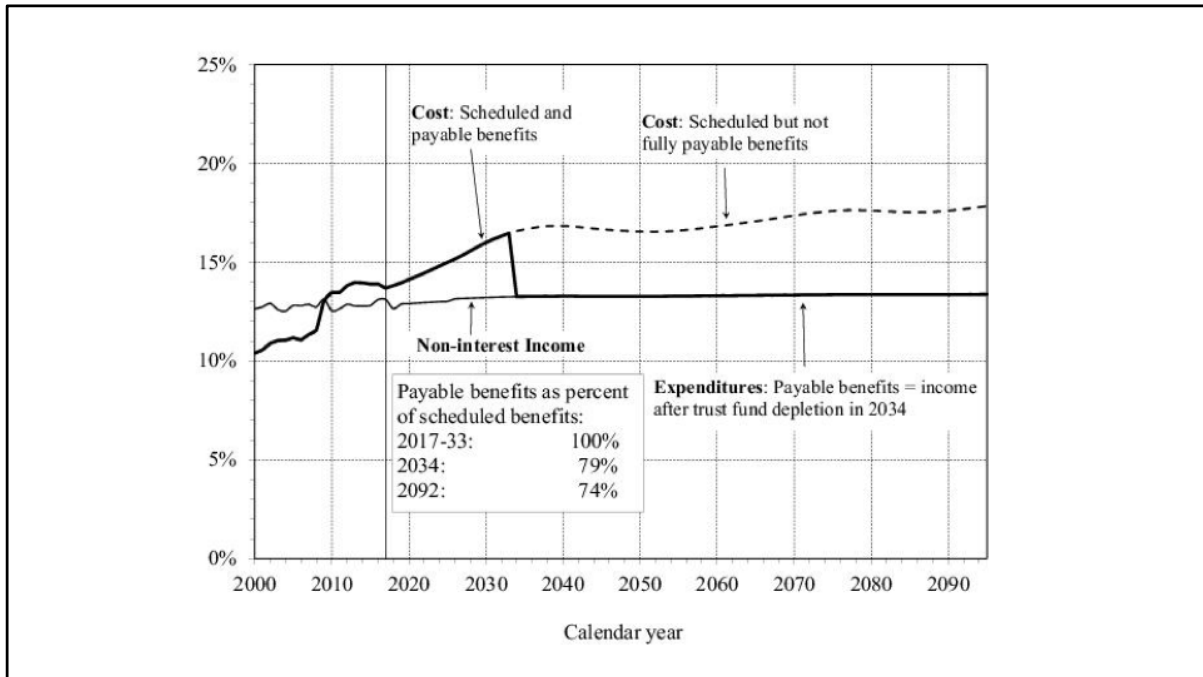
A SUMMARY OF THE 2018 ANNUAL REPORTS
Social Security and Medicare Boards of Trustees

The following table presents the plot points for the data in Chart E—OASI, DI and HI Trust Fund Ratios (asset reserves as a percentage of annual expenditures) on a calendar year basis, for the historical period 1970 (1970 - 2017) and the projection period (2018 - 2092), under the intermediate assumptions.

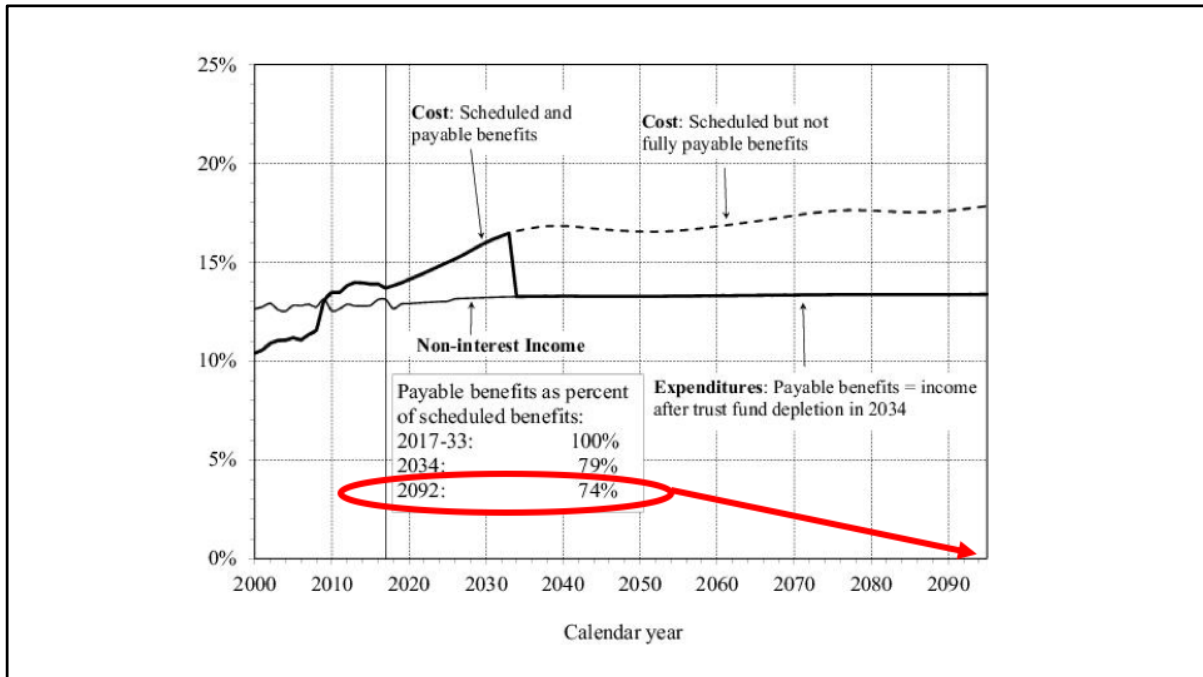
Plot points for Chart E			
Year	OASI	DI	HI
1970	101%	126%	47%
1971	94%	140%	54%
1972	88%	140%	47%
1973	75%	125%	40%
1974	68%	110%	69%
1975	63%	92%	79%
1976	54%	71%	77%
1977	47%	48%	66%
1978	39%	26%	57%
1979	30%	30%	54%
1980	23%	35%	52%
1981	18%	21%	45%
1982	15%	17%	52%
1983	14%	15%	20%
1984	20%	35%	29%
1985	24%	27%	32%
1986	28%	38%	41%
1987	30%	44%	79%
1988	41%	38%	101%
1989	59%	38%	115%
1990	79%	40%	128%
1991	87%	39%	136%
1992	103%	40%	136%
1993	117%	35%	131%
1994	130%	23%	122%

https://www.ssa.gov/OACT/TRSUM/images/LD_ChartE.html





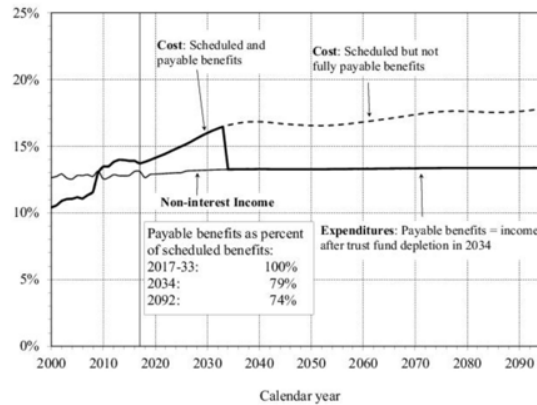
https://www.ssa.gov/OACT/TR/2018/II_D_project.html#133064



https://www.ssa.gov/OACT/TR/2018/II_D_project.html#133064

Annual OASDI cost exceeded non-interest income in 2010 for the first time since 1983. The Trustees project that cost will continue to exceed non-interest income throughout the '20s. Beginning in 2018, cost exceeds total income, and combined OASI and DI Trust Fund reserves diminish until they become depleted in 2034. After trust fund reserve depletion, continued support expenditures at a level of 79 percent of program cost for the rest of 2034, declining to 74 percent for 2092. Figure II.D.2 depicts OASDI operations as a combined whole. How the differences between scheduled and payable benefits would begin at different times for the program's two trust funds: in 2032 for DI and in 2034 for OASI.

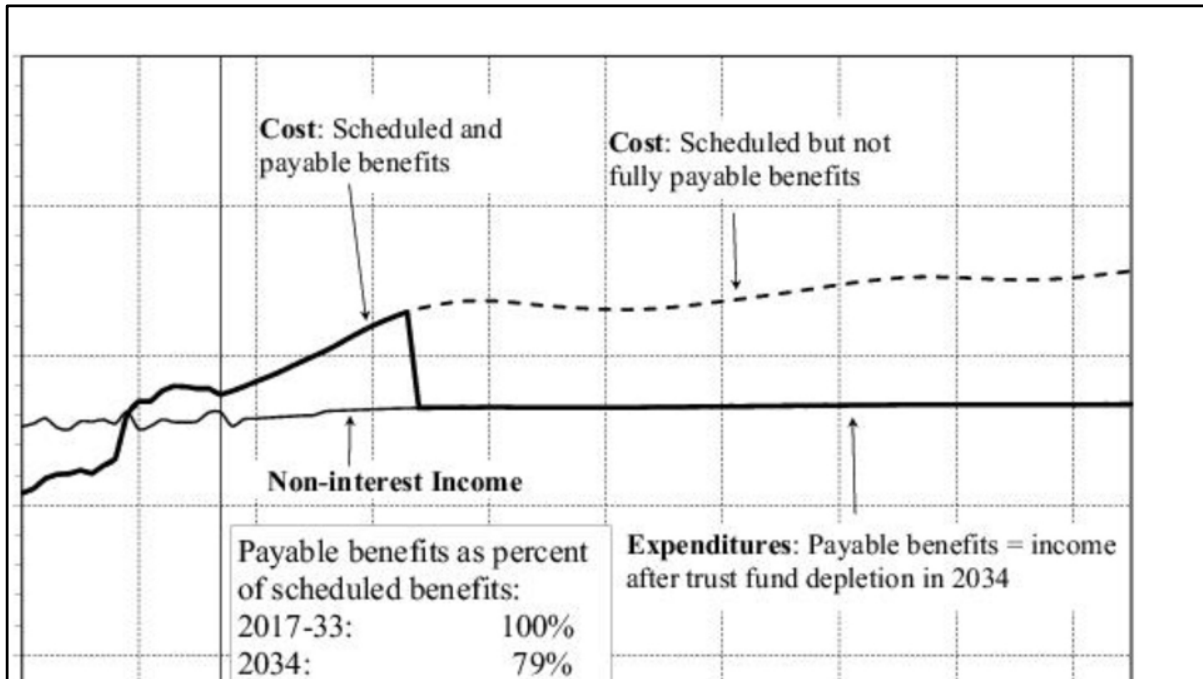
Figure II.D.2.—OASDI Income, Cost, and Expenditures as Percentages of Taxable Payroll
[Under Intermediate Assumptions]



[D]

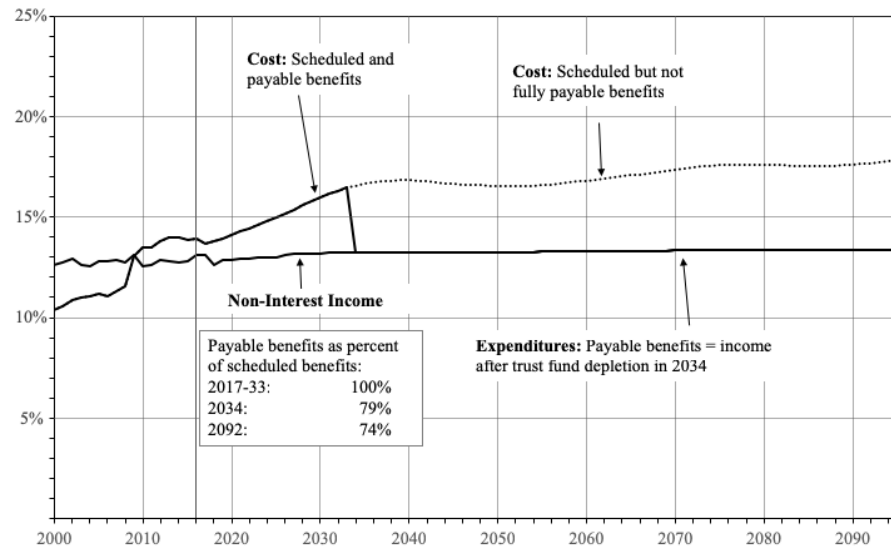
Figure II.D.3 shows the estimated number of covered workers per OASDI beneficiary. Figures II.D.2 and II.D.3 illustrate the inverse relationship between cost rates and the number of covered workers. In particular, the projected future increase in the cost rate reflects a projected decline in the number of covered workers per beneficiary. There were about 2.8 workers for every OASDI beneficiary in 2008, and this ratio had been stable, remaining between 3.2 and 3.4 from 1974 through 2008, and has declined since then due to the economic recession and the beginning of the demographic shift that is projected to continue over the next 20 years. The Trustees project that the ratio of workers to beneficiaries will continue to decline due to this demographic shift, as workers of lower birth cohorts enter the workforce.

https://www.ssa.gov/OACT/TR/2018/II_D_project.html#133064

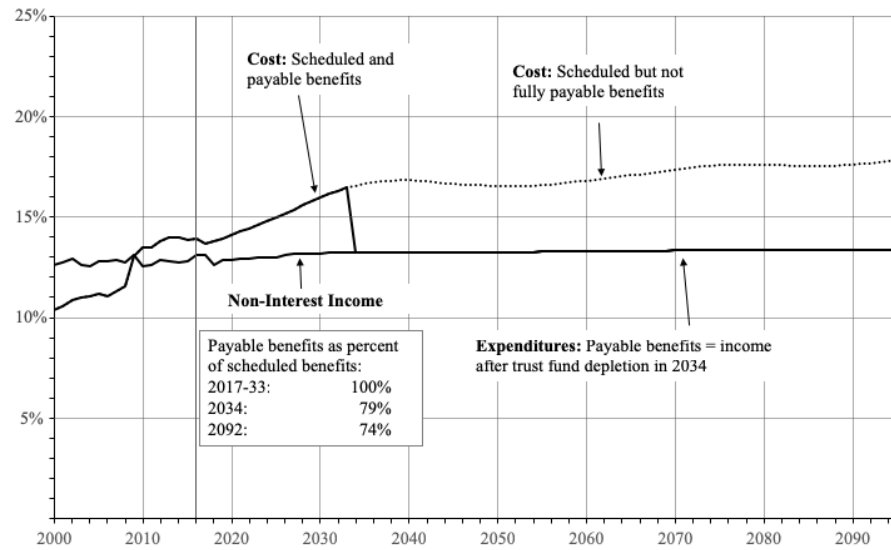


https://www.ssa.gov/OACT/TR/2018/II_D_project.html#133064

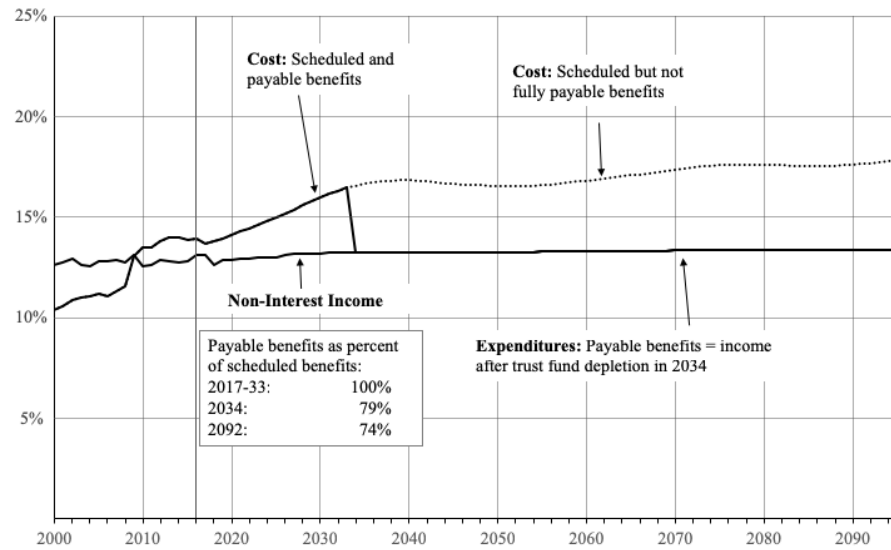
Start Here



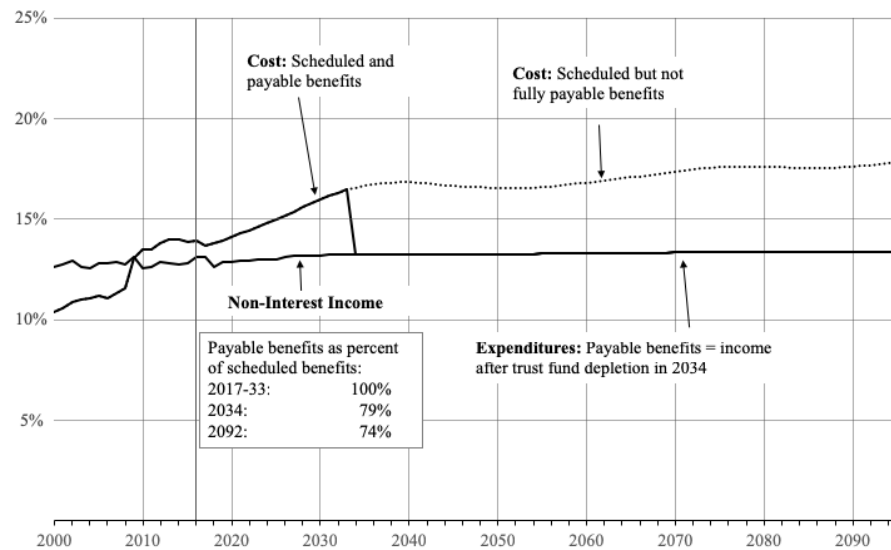
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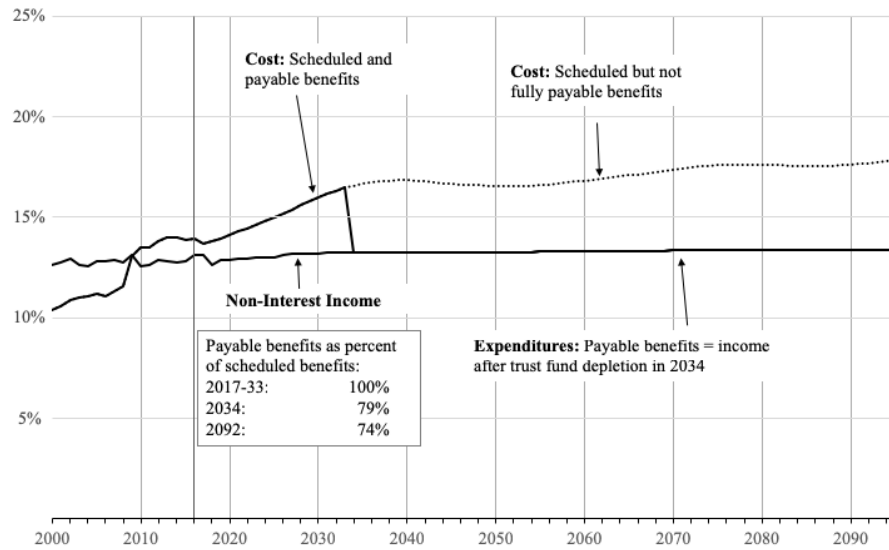
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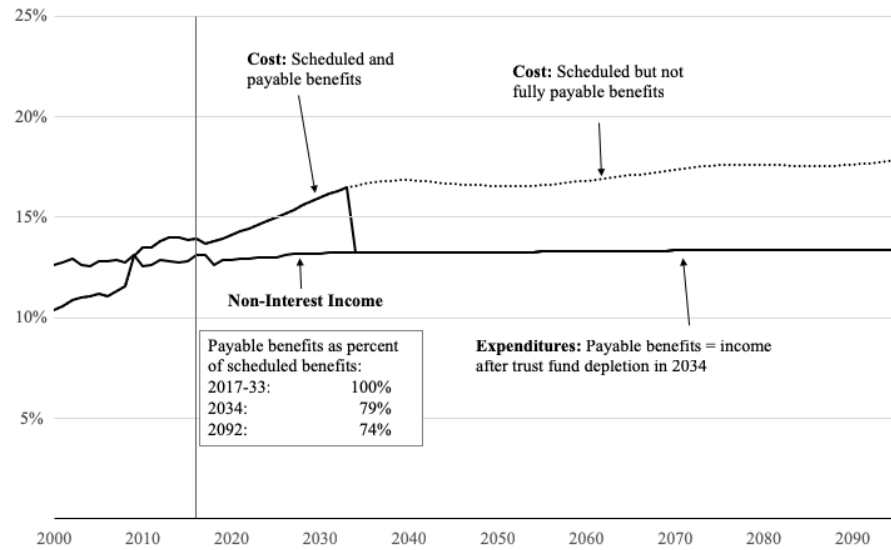
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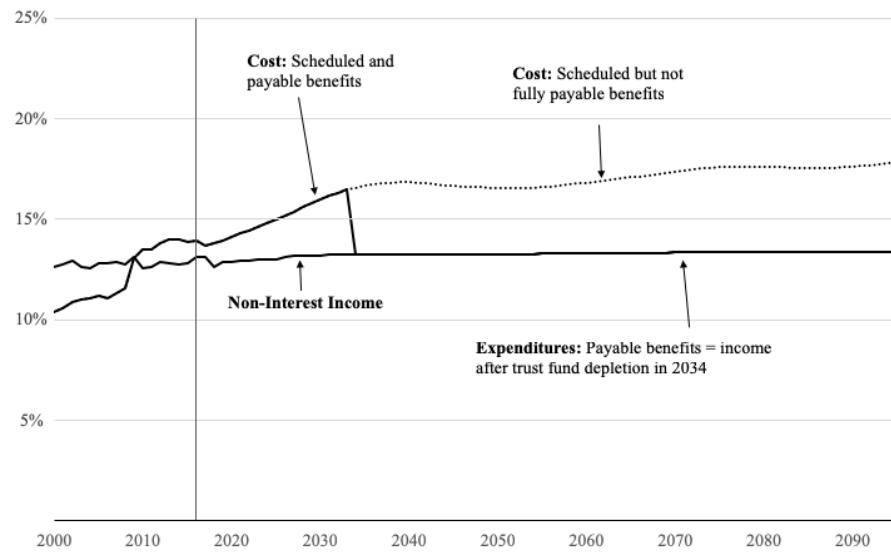
Change Horizontal Gridlines (style decision)



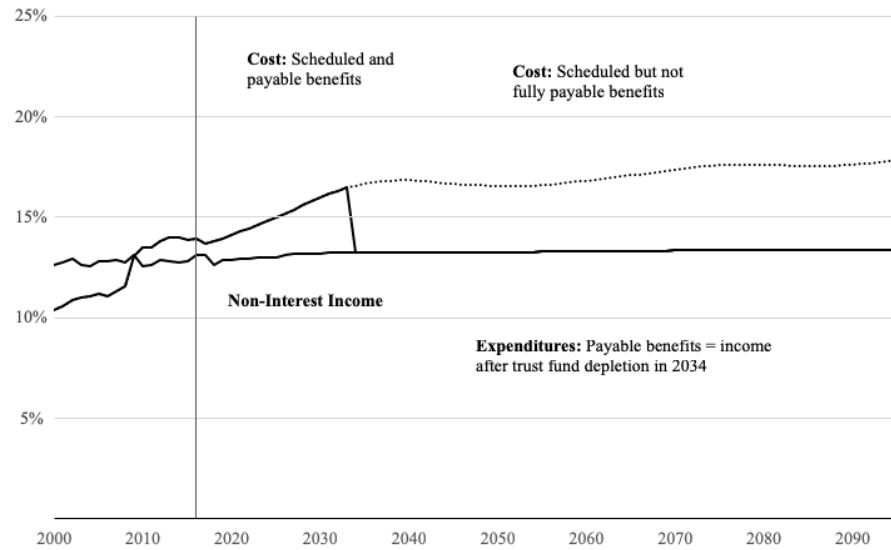
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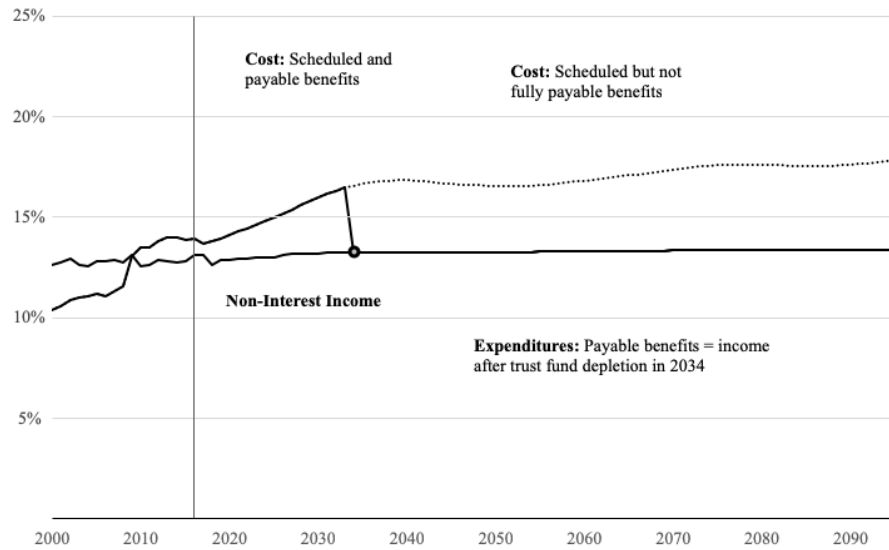
Remove "Payable benefits" box



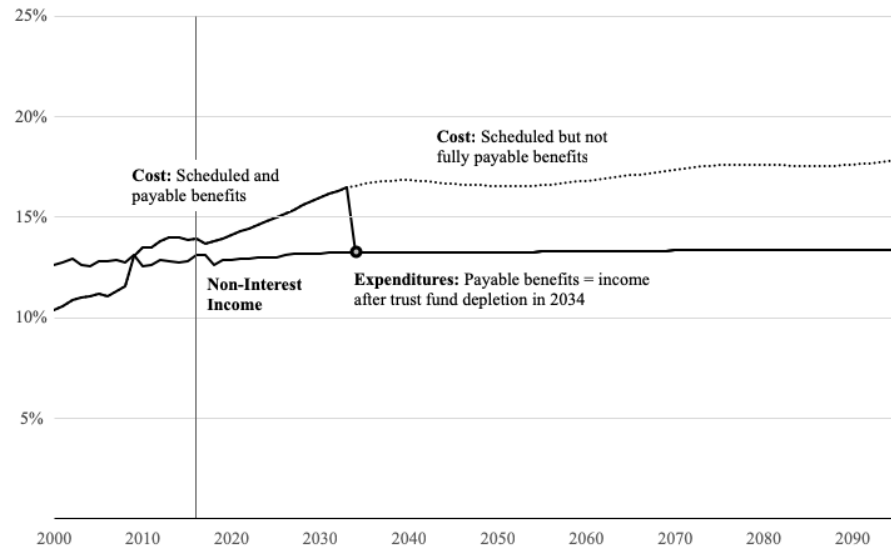
Remove Arrows



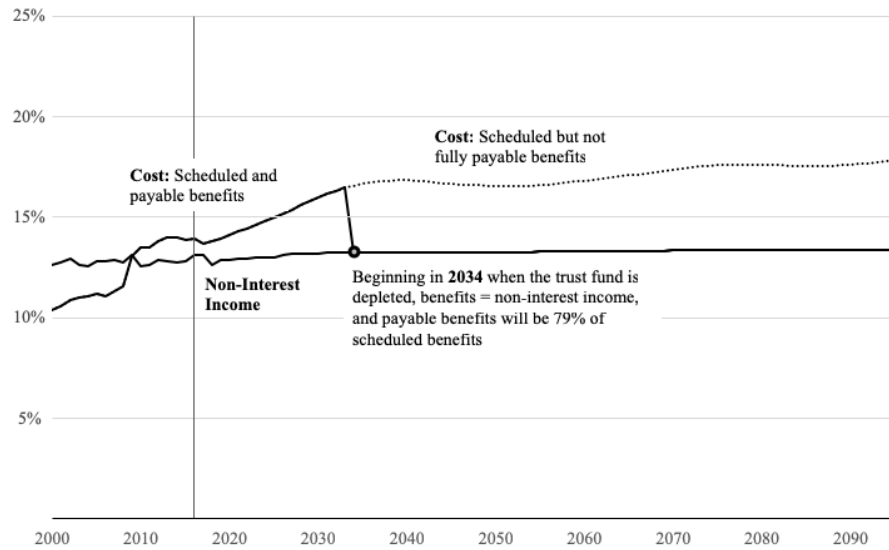
Add Point for 2034



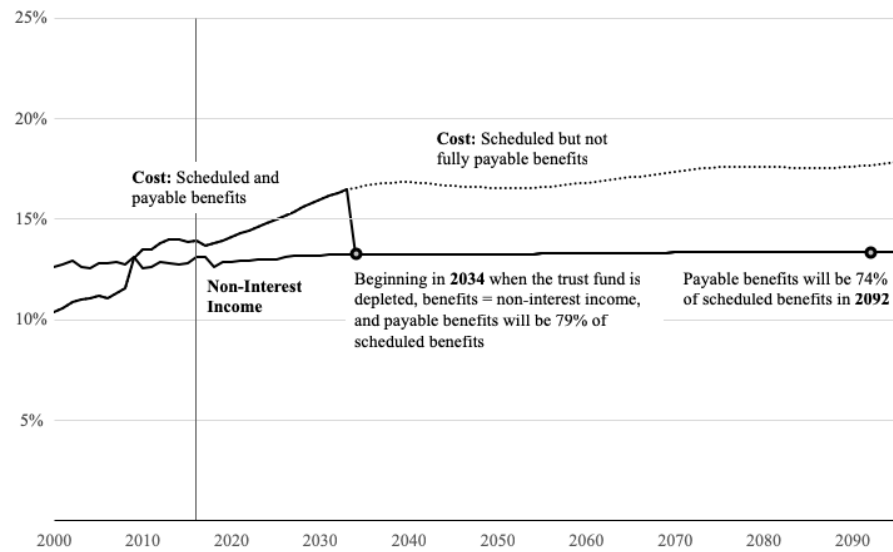
Align Labels



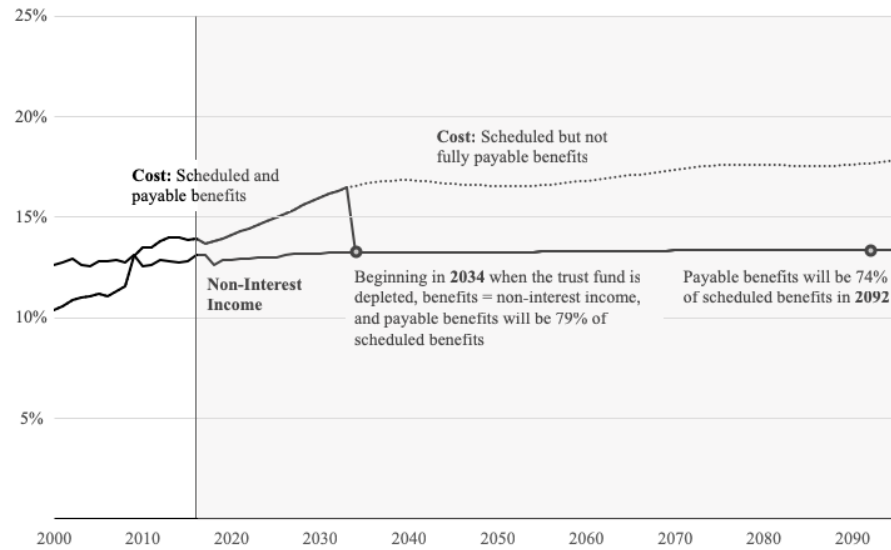
Adjust 2034 Label



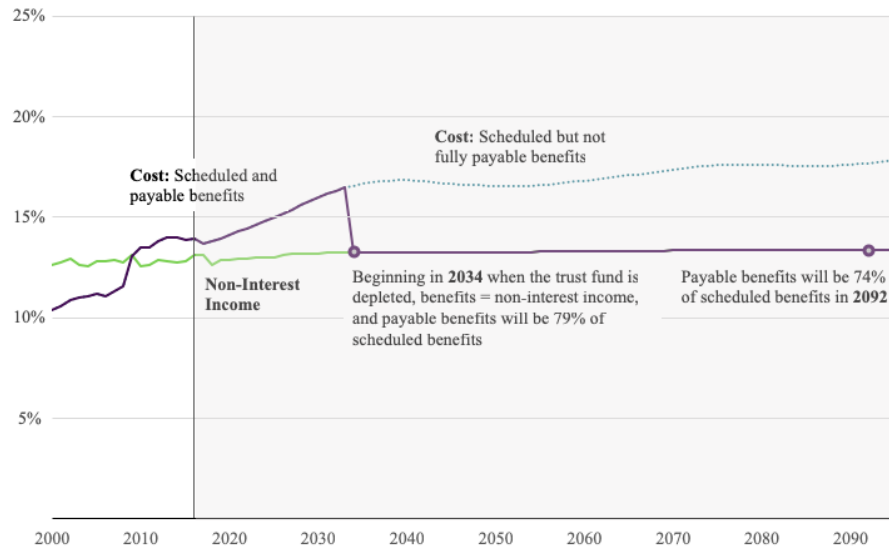
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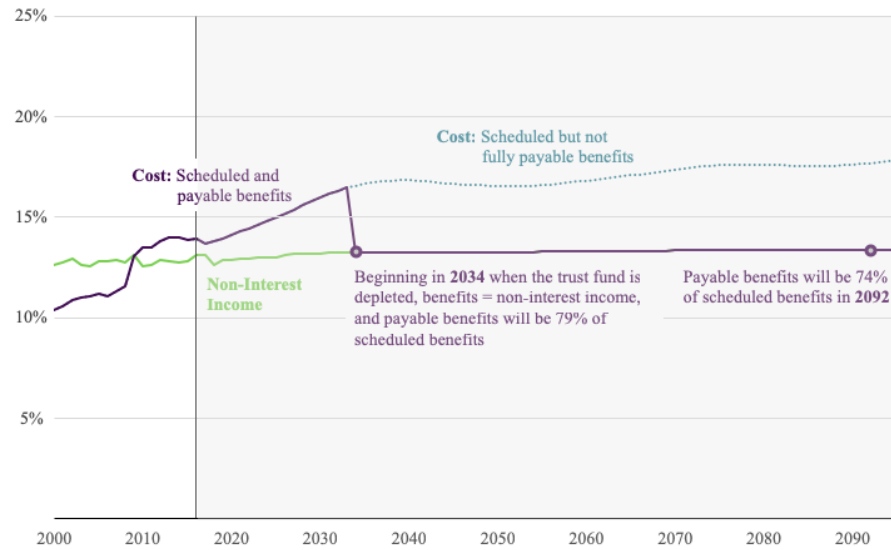
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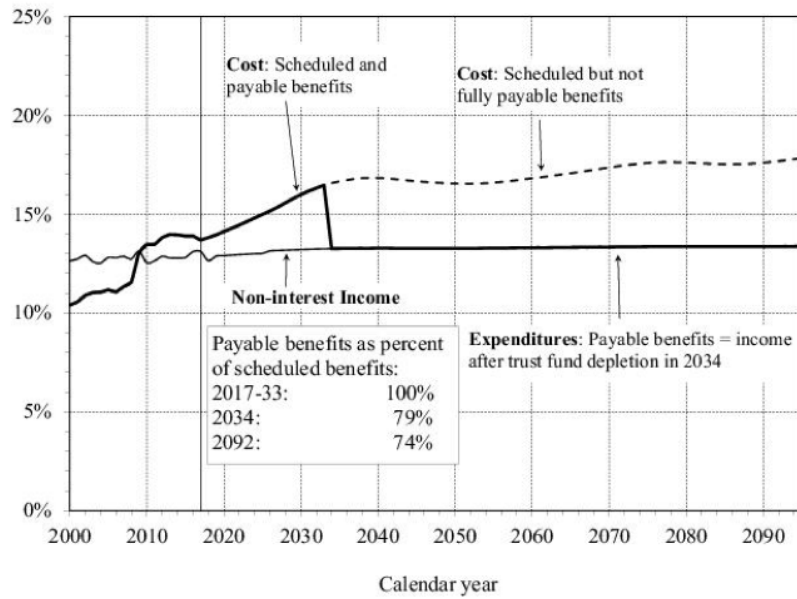
Add Black-and-White-Friendly Colors(?)



Color and Tweak Labels(?)



Final



https://www.ssa.gov/OACT/TR/2018/II_D_project.html#133064

Final

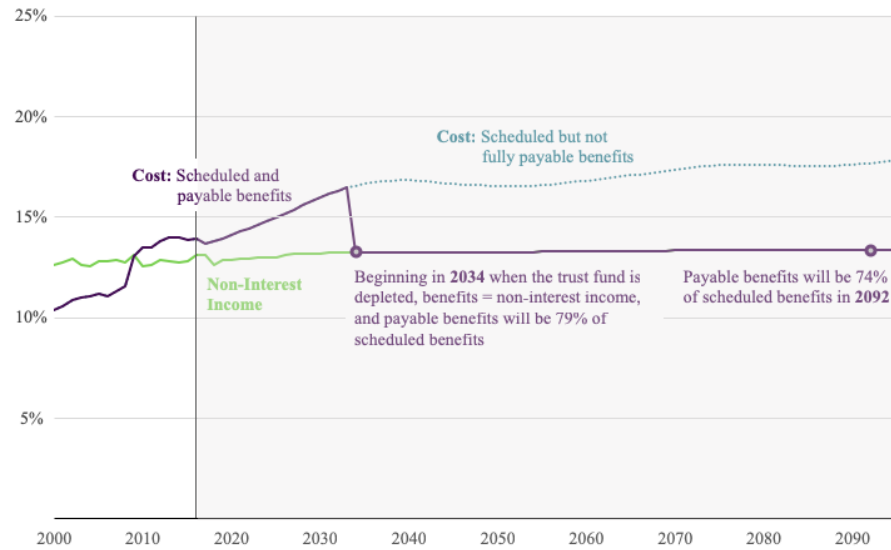
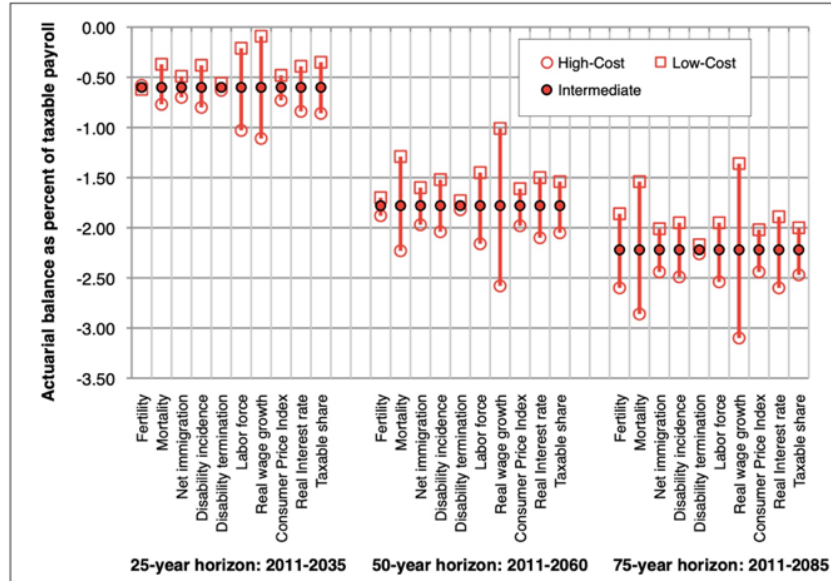
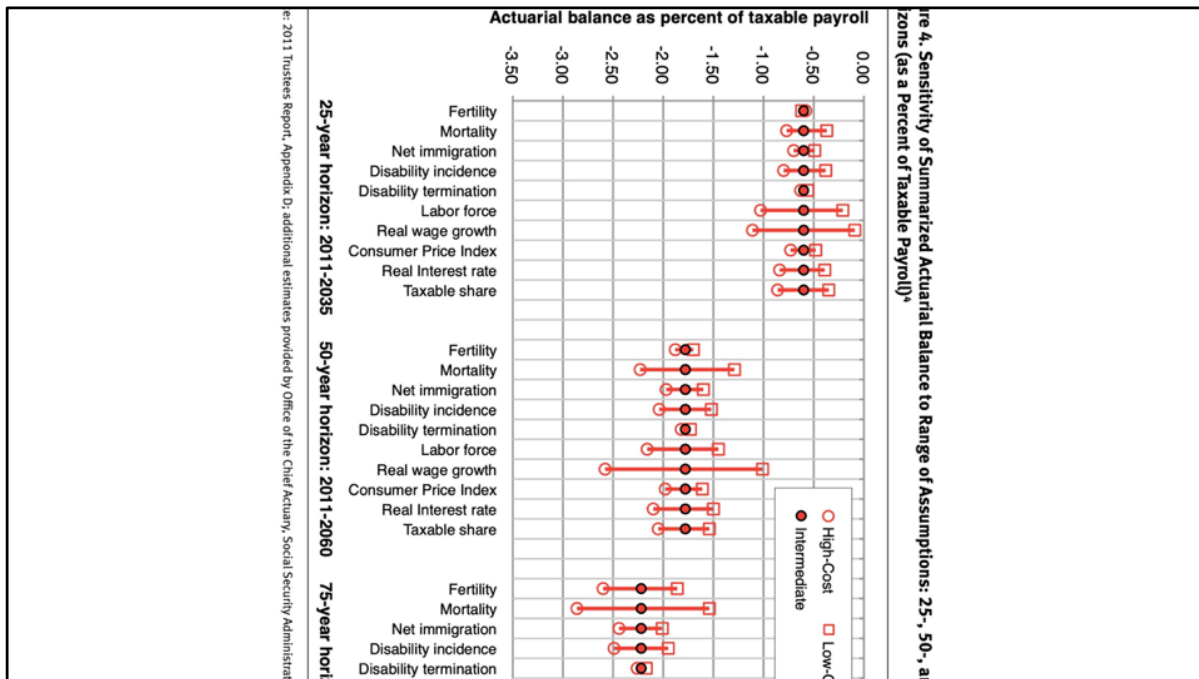


Figure 4. Sensitivity of Summarized Actuarial Balance to Range of Assumptions: 25-, 50-, and 75-Year Horizons (as a Percent of Taxable Payroll)*

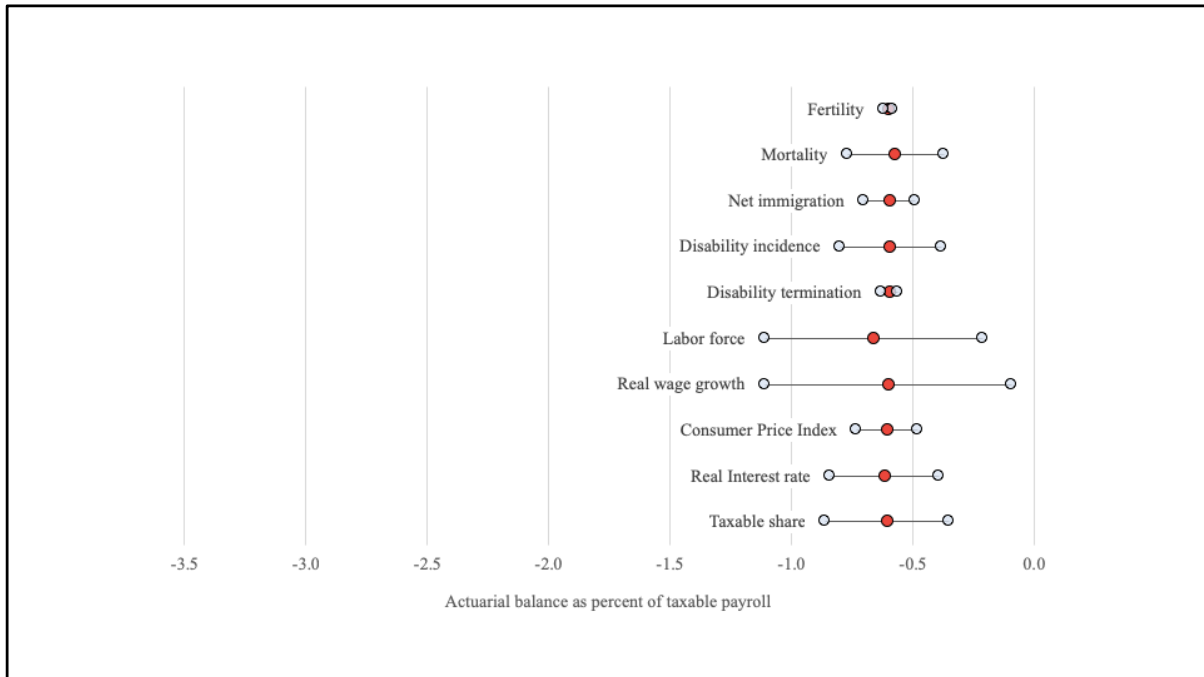


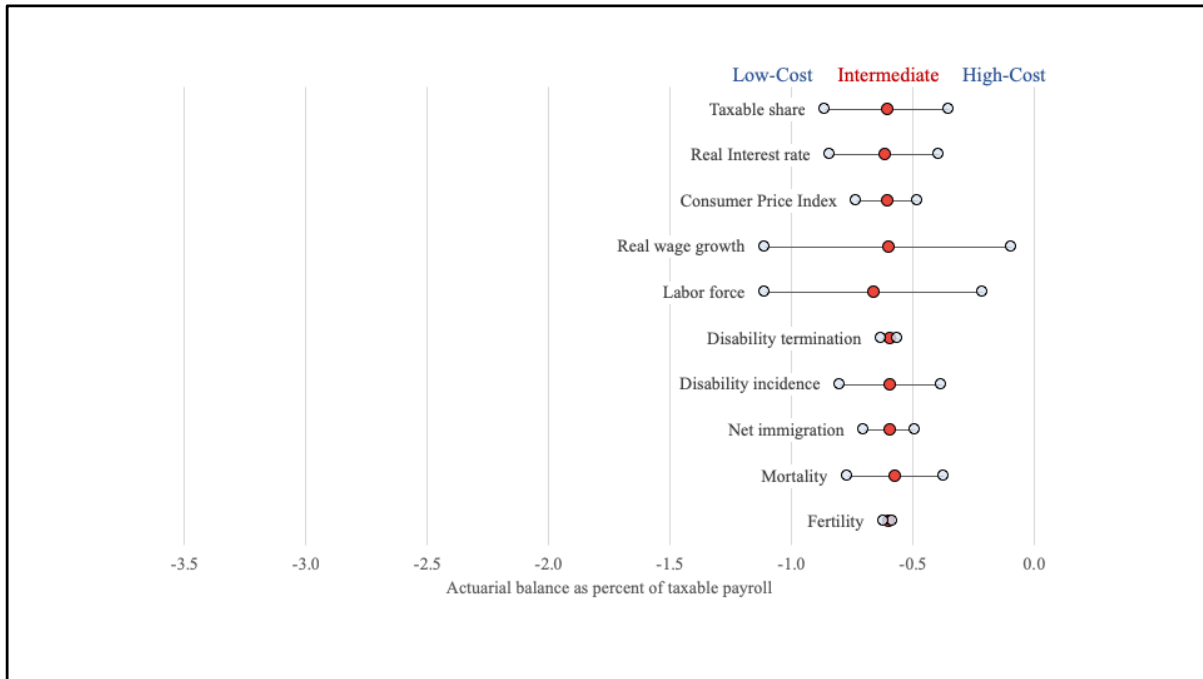
Source: 2011 Trustees Report, Appendix D; additional estimates provided by Office of the Chief Actuary, Social Security Administration.

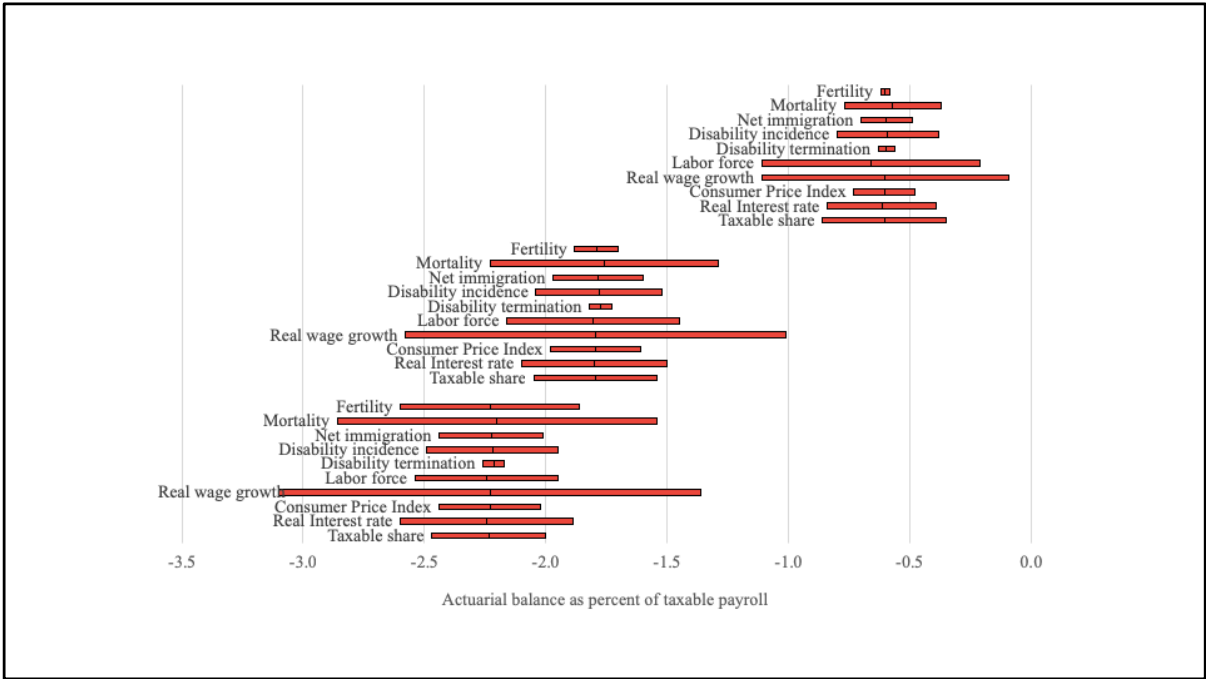
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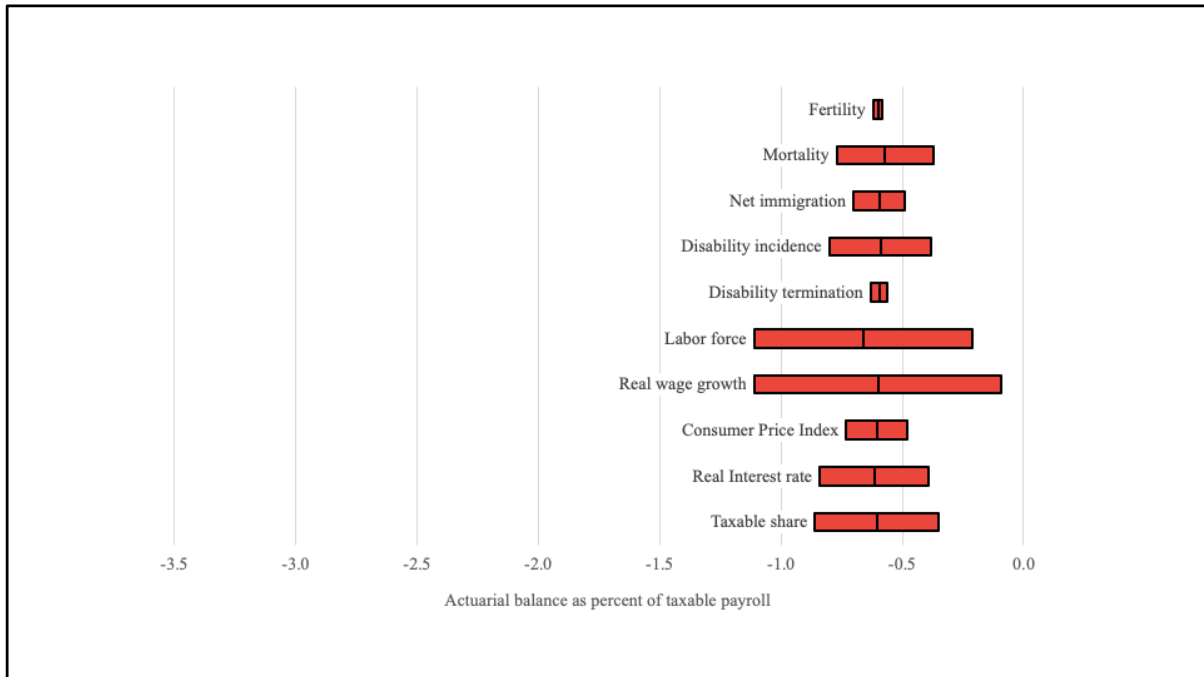


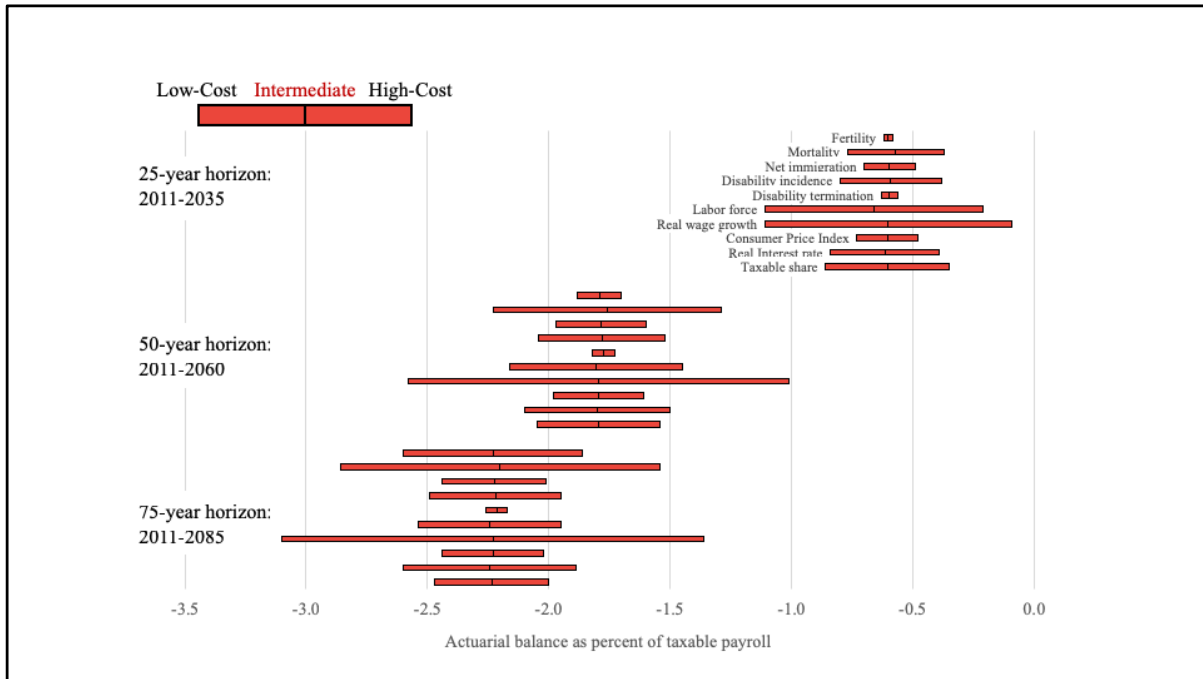
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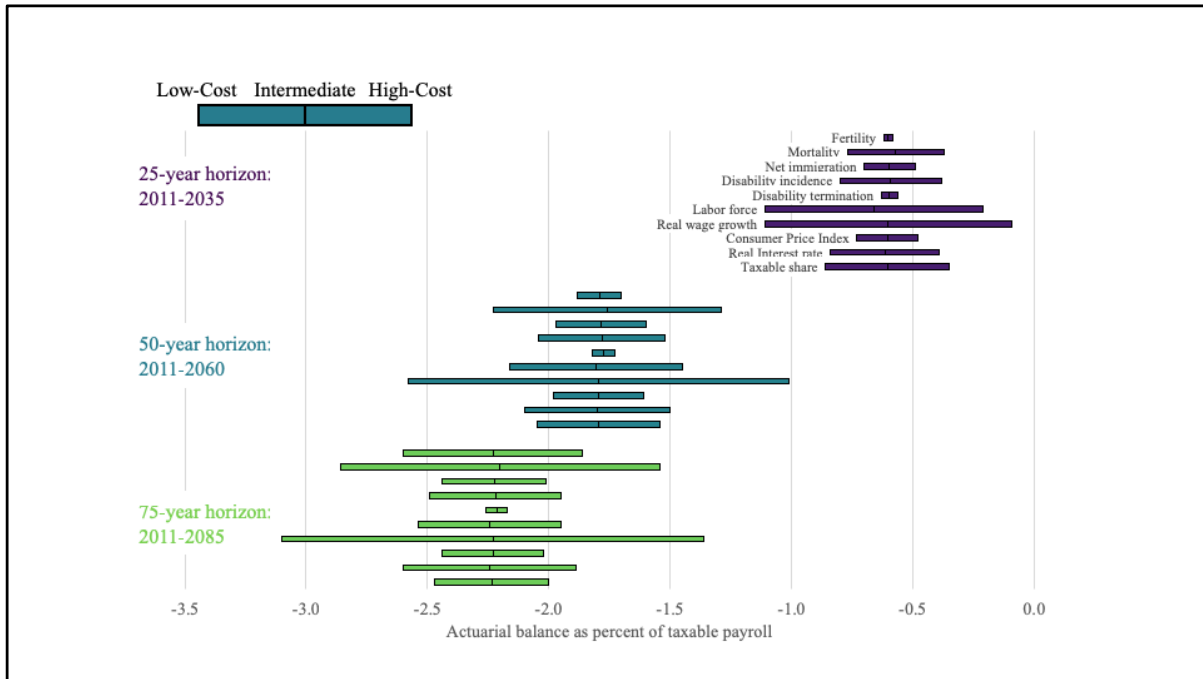




Table 14. Real Wage Assumptions in Trustees Report: 2011

Scenario	Real Wage	Productivity Growth	Compensation Share	Earnings Ratio	Average Hours	Price Differential
Low-Cost	1.8	2.0	0.0	0.0	0.1	-0.3
Intermediate-Cost	1.2	1.7	0.0	-0.1	0.0	-0.4
High-Cost	0.6	1.4	0.0	-0.2	-0.1	-0.5

https://www.ssab.gov/Portals/0/OUR_WORK/REPORTS%20TO%20THE%20BOARD/TPAM_Report_2011.pdf

Table 14. Real Wage Assumptions in Trustees Report: 2011

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https://www.ssab.gov/Portals/0/OUR_WORK/REPORTS%20TO%20THE%20BOARD/TPAM_Report_2011.pdf

Cost Scenarios	Real Wage	Productivity Growth	Compensation Share	Earnings Ratio	Average Hours	Price Differential
Low	1.8	2.0	0.0	0.0	0.1	-0.3
Intermediate	1.2	1.7	0.0	-0.1	0.0	-0.4
High	0.6	1.4	0.0	-0.2	-0.1	-0.5

**Table IV.B1.—Annual Income Rates, Cost Rates, and Balances,
Calendar Years 1990-2095 (Cont.)**
[As a percentage of taxable payroll]

Calendar year	OASI			DI			OASDI		
	Income rate ^a	Cost rate ^b	Balance ^b	Income rate ^a	Cost rate ^b	Balance ^b	Income rate ^a	Cost rate ^b	Balance ^b
Low-cost:									
2018.....	10.24	11.59	-1.35	2.34	2.00	0.34	12.58	13.59	-1.01
2019.....	11.01	11.56	-.56	1.84	1.90	-.06	12.85	13.46	-.62
2020.....	11.04	11.60	-.56	1.81	1.81	^c	12.86	13.41	-.55
2021.....	11.06	11.61	-.55	1.81	1.74	.07	12.88	13.35	-.48
2022.....	11.08	11.66	-.58	1.82	1.69	.13	12.90	13.35	-.45
2023.....	11.09	11.72	-.63	1.82	1.64	.17	12.91	13.36	-.45
2024.....	11.11	11.79	-.67	1.82	1.61	.21	12.93	13.39	-.46
2025.....	11.12	11.84	-.72	1.82	1.58	.24	12.94	13.42	-.48
2026.....	11.22	11.89	-.67	1.82	1.56	.26	13.04	13.45	-.41
2027.....	11.23	11.96	-.73	1.82	1.54	.28	13.06	13.50	-.45
2030.....	11.27	12.33	-1.06	1.82	1.49	.34	13.09	13.81	-.72
2035.....	11.30	12.60	-1.30	1.82	1.46	.36	13.12	14.06	-.94
2040.....	11.30	12.44	-1.14	1.82	1.45	.37	13.12	13.89	-.76
2045.....	11.28	11.98	-.70	1.82	1.47	.35	13.10	13.45	-.35
2050.....	11.27	11.67	-.41	1.82	1.46	.36	13.09	13.13	-.05
2055.....	11.26	11.56	-.29	1.82	1.46	.36	13.09	13.02	.07
2060.....	11.27	11.63	-.36	1.82	1.44	.38	13.09	13.07	.03
2065.....	11.28	11.69	-.41	1.82	1.44	.39	13.10	13.12	-.02
2070.....	11.28	11.74	-.46	1.82	1.44	.39	13.11	13.17	-.07
2075.....	11.28	11.72	-.43	1.82	1.42	.40	13.10	13.14	-.03
2080.....	11.27	11.50	-.23	1.82	1.43	.39	13.09	12.92	.17
2085.....	11.25	11.23	.02	1.82	1.47	.35	13.08	12.70	.38
2090.....	11.25	11.22	.04	1.82	1.50	.32	13.08	12.72	.36
2095.....	11.27	11.45	-.18	1.82	1.50	.32	13.09	12.95	.14

<https://www.ssa.gov/OACT/TR/2018/tr2018.pdf>

**Table IV.B1.—Annual Income Rates, Cost Rates, and Balances,
Calendar Years 1990-2095 (Cont.)**
[As a percentage of taxable payroll]

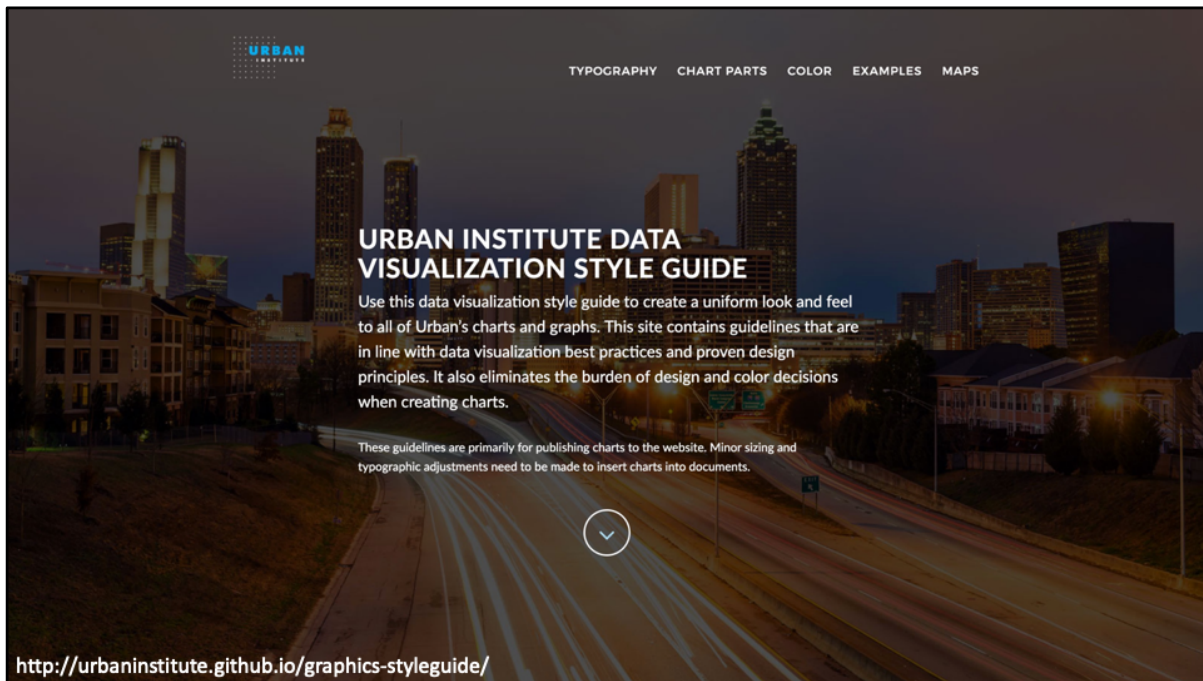
Calendar year	OASI			DI			OASDI		
	Income rate ^a	Cost rate ^b	Balance ^b	Income rate ^a	Cost rate ^b	Balance ^b	Income rate ^a	Cost rate ^b	Balance ^b
Low-cost:									
2018.....	10.24	11.59	-1.35	2.34	2.00	0.34	12.58	13.59	-1.01
2019.....	11.01	11.56	-.36	1.84	1.90	-.06	12.85	13.46	-.62
2020.....	11.04	11.60	-.36	1.81	1.81	.00 ^c	12.86	13.41	-.55
2021.....	11.06	11.61	-.35	1.81	1.74	.07	12.88	13.35	-.48
2022.....	11.08	11.66	-.38	1.82	1.69	.13	12.90	13.35	-.45
2023.....	11.09	11.72	-.43	1.82	1.64	.17	12.91	13.36	-.45
2024.....	11.11	11.79	-.47	1.82	1.61	.21	12.93	13.39	-.46
2025.....	11.12	11.84	-.52	1.82	1.58	.24	12.94	13.42	-.48
2026.....	11.22	11.89	-.67	1.82	1.56	.26	13.04	13.45	-.41
2027.....	11.23	11.96	-.73	1.82	1.54	.28	13.06	13.50	-.45
2030.....	11.27	12.33	-1.06	1.82	1.49	.34	13.09	13.81	-.72
2035.....	11.30	12.60	-1.30	1.82	1.46	.36	13.12	14.06	-.94
2040.....	11.30	12.44	-1.14	1.82	1.45	.37	13.12	13.89	-.76
2045.....	11.28	11.98	-.70	1.82	1.47	.35	13.10	13.45	-.35
2050.....	11.27	11.67	-.41	1.82	1.46	.36	13.09	13.13	-.05
2055.....	11.26	11.56	-.29	1.82	1.46	.36	13.09	13.02	.07
2060.....	11.27	11.63	-.36	1.82	1.44	.38	13.09	13.07	.03
2065.....	11.28	11.69	-.41	1.82	1.44	.39	13.10	13.12	-.02
2070.....	11.28	11.74	-.46	1.82	1.44	.39	13.11	13.17	-.07
2075.....	11.28	11.72	-.43	1.82	1.42	.40	13.10	13.14	-.03
2080.....	11.27	11.50	-.23	1.82	1.43	.39	13.09	12.92	.17
2085.....	11.25	11.23	.02	1.82	1.47	.35	13.08	12.70	.38
2090.....	11.25	11.22	.04	1.82	1.50	.32	13.08	12.72	.36
2095.....	11.27	11.45	-.18	1.82	1.50	.32	13.09	12.95	.14

<https://www.ssa.gov/OACT/TR/2018/tr2018.pdf>

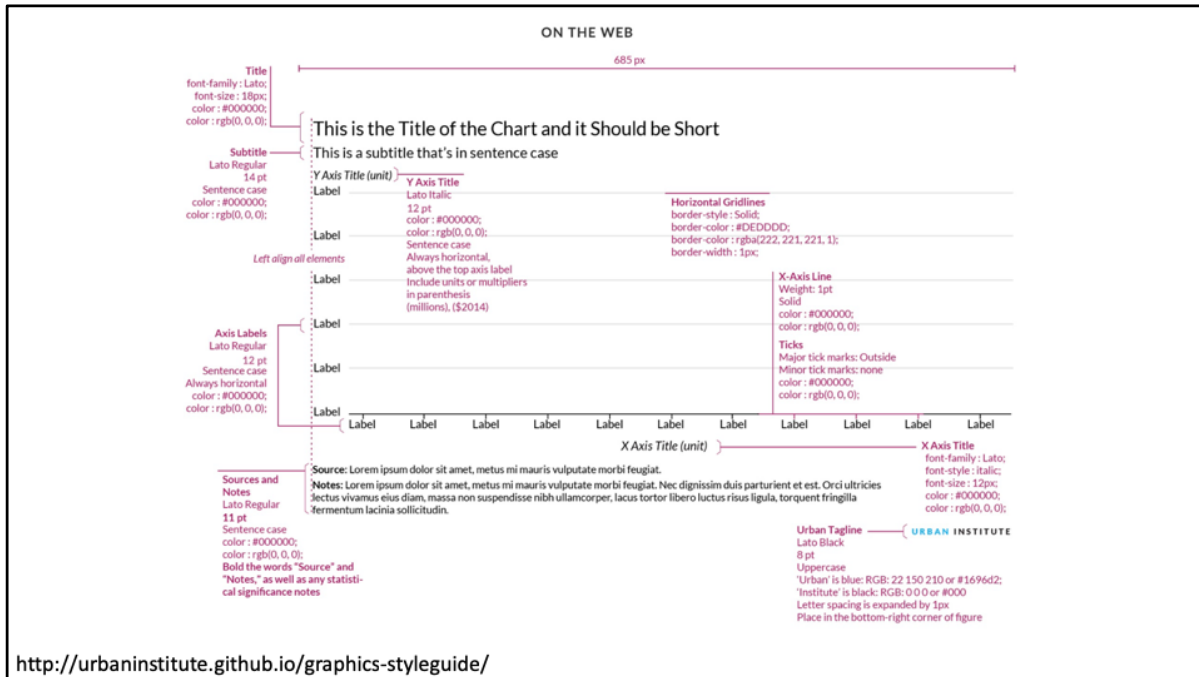




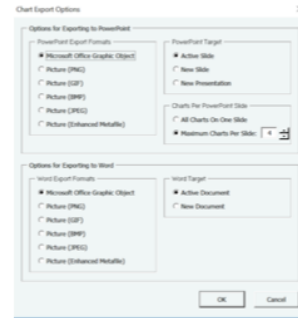
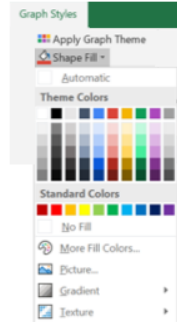
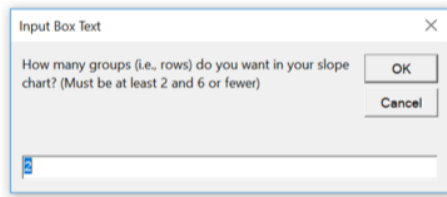
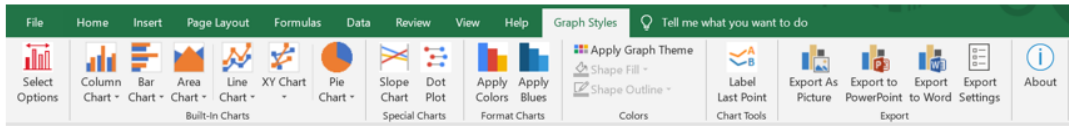
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<http://urbaninstitute.github.io/graphics-styleguide/>

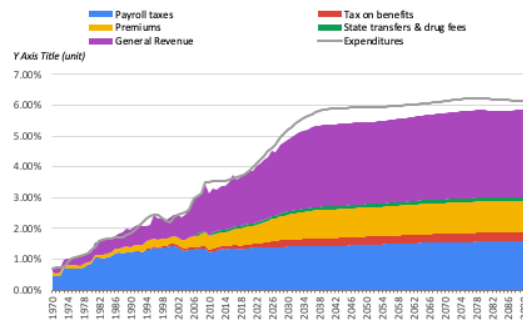
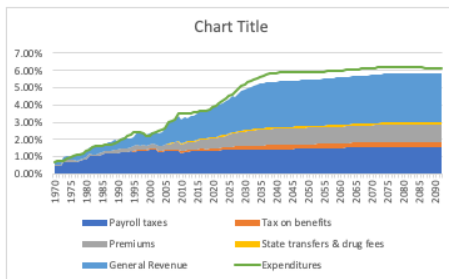
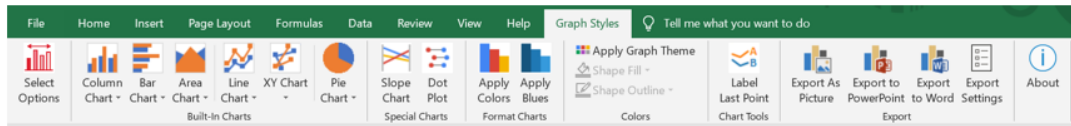


Excel Graphing Add-in



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	A	B	C	D	E	F	G	H	I	J	K	L	
1		Payroll taxes	Tax on benefits	Premiums	State transfers & drug fees	General Revenue	Expenditures						
2	1970	0.46%	0.00%	0.10%	0.00%	0.18%	0.71%						
3	1971	0.43%	0.00%	0.11%	0.00%	0.16%	0.73%						
4	1972	0.45%	0.00%	0.11%	0.00%	0.14%	0.73%						
5	1973	0.70%	0.00%	0.11%	0.00%	0.15%	0.74%						
6	1974	0.71%	0.00%	0.12%	0.00%	0.18%	0.88%						
7	1975	0.69%	0.00%	0.11%	0.00%	0.20%	1.00%						
8	1976	0.69%	0.00%	0.11%	0.00%	0.21%	1.04%						
9	1977	0.68%	0.00%	0.11%	0.00%	0.30%	1.09%						
10	1978	0.74%	0.00%	0.11%	0.00%	0.30%	1.14%						
11	1979	0.80%	0.00%	0.10%	0.00%	0.29%	1.18%						
12	1980	0.84%	0.00%	0.11%	0.00%	0.29%	1.31%						
13	1981	1.04%	0.00%	0.12%	0.00%	0.38%	1.40%						
14	1982	1.04%	0.00%	0.11%	0.00%	0.40%	1.57%						
15	1983	1.03%	0.00%	0.12%	0.00%	0.53%	1.63%						
16	1984	1.06%	0.00%	0.13%	0.00%	0.45%	1.65%						
17	1985	1.10%	0.00%	0.13%	0.00%	0.42%	1.66%						
18	1986	1.20%	0.00%	0.13%	0.00%	0.40%	1.69%						
19	1987	1.21%	0.00%	0.15%	0.00%	0.49%	1.72%						
20	1988	1.20%	0.00%	0.17%	0.00%	0.51%	1.70%						
21	1989	1.22%	0.00%	0.22%	0.00%	0.56%	1.79%						
22	1990	1.21%	0.00%	0.19%	0.00%	0.54%	1.85%						
23	1991	1.27%	0.00%	0.20%	0.00%	0.62%	1.96%						
24	1992	1.26%	0.00%	0.22%	0.00%	0.64%	2.09%						
25	1993	1.23%	0.00%	0.22%	0.00%	0.61%	2.19%						
26	1994	1.21%	0.00%	0.25%	0.00%	0.50%	2.31%						
<div> <div>Sheet1</div> <div>Sheet2</div> <div>Sheet1 (2)</div> </div>													

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